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ADVANCED MANAGEMENT

Quarterly Journal

Society for Advancement of Management

From Tactics to Strategy in Industrial Relations

What's Happening in Industrial Health?

Statistical Methods in Job Evaluation

Appraising Employee Attitudes

The Worker's View of Job Opportunity

December, 1948 Vol. XIII, No. 4

ADVANCED MANAGEMENT

Quarterly Journal

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Comment

TWO recent occurrences prompt me to a few words on "managerial prerogatives."

One is the wide publicity given to the excellent story of the Crown Zellerbach Corporation and the other West Coast pulp and paper companies, explaining their strike-free labor-management relations over the last fourteen years.

The other is the ruling of the United States Circuit Court of Appeals of Chicago to the effect that retirement and pension funds were a proper subject of collective bargaining if this was demanded by the union.

The important emphasis in the West Coast study, sponsored by the National Planning Association as part of a national study of selected cases of successful labor relations, is the statement of the reasons for the peaceful conditions which have obtained. Five factors are mentioned: (1) management's willingness to accept unionism; (2) the union's observance of their contract pledges; (3) the settlement of controversies without resort to third parties; (4) the conduct of negotiations without undue delay; (5) the mutual discussion of a wide range of subjects.

It is the question of what may wisely be included in this "wide range of subjects" which is the issue when managerial prerogatives are under discussion. And my point will be the simple one that a continued use of this phrase by managers as a matter of high and absolute principle may well prove an obstruction to developing a sentiment on both sides to try to make collective bargaining work with a minimum of friction and a maximum of mutual respect. The obstacle is due to a disposition of some employers to withdraw behind a phrase rather than to face controversial issues as specific, discrete problems to be considered around a table with the best wisdom which can be mustered. A problem-solving approach is almost inevitably the constructive one, as is interestingly brought out in the study entitled *Patterns of Union-Management Relations* by Frederick H. Harbison and Robert Dubin.

The issues confronted in collective bargaining are unmistakably multiplying in number and in complexity, and issues now recognized as directly negotiable often lead off into discussions of subsidiary and correlative matters which are injected usually by the unions because the logic of the argument seems to them to require a broadening of the issues. That "labor relations" cannot be kept separately off in a neat compartment of management effort is today recognized by every realist. Nor, as has been said many times before, is the point of tension necessarily about the facts; it may be about what one or the other party *thinks* are the facts even though they are misinformed or misled. Conflicts growing out of misunderstanding and misinformation, as well as those growing out of a desire to see issues in a wider frame of economic philosophy and policy, are just as real and disturbing as conflicts arising over jointly agreed facts.

The important fact from the point of view of achieving smooth operation is that *conflict has arisen and is present.* And until its sources are examined and its merits considered, there is usually no abatement of negative and divisive attitudes.

Any *a priori* view which raises some rigid barrier as to what matters are not subject to discussion is itself an invitation to continued misunderstanding and conflict.

Surely a wise management is able to make clear to all affected, if it will take the educational pains to do it, that, in the interests of all, certain decisions must rest in its hands and also, of course, that the giving effect to decisions is a managerial responsibility. Nothing here said is intended to give comfort to those who would deny the necessity for unitary authority at the point of operating action.

But what needs to be realized by more managements is that the process of arriving at decisions as well as assurance that decisions will be accepted for willing performance—all this requires an airing of differences of view, a meeting of objections and a willingness to supply full facts which can help remove misunderstandings, rumors and falsehoods under which either side may be laboring.

There are two aspects to this approach which recommends a dropping of "managerial prerogatives" from a defensive management vocabulary. One is the willingness to discuss with them "what's on the workers' mind," as Whiting Williams reminded us years ago. The other is the building up of some plan of education and training on an up-from-the-bottom basis which is designed to create understanding about matters relevant to peaceful dealings *before* misunderstanding and misinformation get too powerful. The cooperative work of the Industrial Relations Center of the University of Chicago in building training programs with certain employers and unions, which are designed to generate light instead of heat, seems, for example, worthy of a

vast extension as a preventive program in this connection. So also is the approach of the Botany Mills in its joint supervisor-union training courses. And so also is the "multiple management" approach of the McCormick Company of Baltimore.

What we need is not managers who say, "We refuse to discuss *that* matter," but executives who say, "We propose to have our relations of mutual trust with union officers and employees so well established and so fully informed that we can discuss reasonably together whatever issues are bothering them."

ORDWAY TEAD

FOR good or ill the pledges made by the lone campaigner will bind the next administration. For the next four years our labor leaders will be riding high, with the encouragement and support of the men in the seats of the mighty in Washington. Moreover it is all part of a world-wide pattern. In every country the accredited representatives of the workers are increasing their powers. In every test of strength they win more control. Resistance either from within or without the ranks has had little success.

Management may well take stock of the situation in realistic fashion. Why continue to try to sell an unwanted product in an antagonistic market? If the rank and file of labor continue to reject the most appealing offers of management to woo them away from their union leaders, why keep up the fruitless effort?

Politicians have a practical solution for such difficulties: "If you can't lick 'em, join 'em." As a matter of general welfare, why not join them? A full appraisal of all the interests of labor leaders and managers has repeatedly disclosed that they have much more in common than in antagonism. Moreover their joint efforts for their own common benefit redound to the general good of those who are dependent upon them—workers, owners and customers.

But though few will disagree with this as a fundamental principle, the problem remains of how to bring it into practice without losing face.

Certainly the way is not another abortive labor-management conference with government representatives seeking a way to write a law to force everybody to "kiss and make up."

The answer is in the workplace, not in the halls of Congress. The best time to begin is the day after a collective agreement is signed.

Management must make the first move and be reconciled to the ridicule with which it will be greeted. Charles E. Wilson of General Electric recently stated that management has much to learn. His statement was greeted with jeers, especially by a labor lawyer who followed him on the same program. As long as our managers pursue the path to learning we may rest assured that they will eventually outrun those labor leaders who proclaim that they have nothing left to learn.

The first step in that process may well be to give the labor leaders the opportunity to find out for themselves how much they do not know. A most effective way is for every manager to ask his labor leader's opinions on every problem affecting the interests of labor—and how few problems do not—before settling upon a solution of the problem. This is no surrender of the responsibilities of management, because, after all is said and done, every problem must be disposed of by managerial decision. But a full disclosure and discussion of all the facts affecting any problem seldom fail to develop common agreement on a solution, which all participants will feel a sense of responsibility to support. The way to the solution may be long and rocky but the goal will reward the bruises and the strain. Each time it is traveled the going becomes easier, because reason constantly increases its power over strife. The will to create overcomes the will to destroy.

And while we are striving to find common cause with labor leaders let us look for a way to give the worker himself the encouragement for a better way of life. If we really mean it when we say that America is the land of opportunity, why not do our best to make it so for those whose working hours are in our keeping? We spend time, effort and money on what we call employee selection and training. We do this in order to try to use individual aptitudes and capabilities to best advantage. But this does not satisfy the craving in the heart of every individual for self-expression and recognition. Yet if in our cock-sureness we did not stop short of our ultimate goal we should go on to encourage the individual to use his own talents to even better advantage than we could have foreseen.

It has been well said that the greatest need in industry today is to find men with the will to work. It has also been said that the desire for recognition is the strongest influence on human conduct. Is it possible that management cannot learn how to develop the one from the other? As Frederick W. Taylor once suggested, let us take a leaf out of the book of the managers of professional baseball teams who have learned how to spark the will of every player to do his level best in every play.

CHARLES C. JAMES

To develop a long-range strategy, we have to know more about the basic cause-and-effect laws of human relations. The man of action and the social scientist can form a partnership that will improve organization team-work and develop a science of human relations if they begin by systematically testing each part of an organization for the degree to which it satisfies people's major goals and for the kinds of reactions which people have to it.

From Tactics to Strategy in Industrial Relations

By E. WIGHT BAKKE

HUMAN relations is our big unfinished job. Again and again in recent years leaders of management and labor have made such a declaration. The problem has been frequently discussed in trade publications and in conferences. That is an encouraging and important development. Articles and speeches provide many descriptions of particular devices and techniques for improving human relations. Occasionally the author or speaker suggests that the reported experience points to certain general rules of management and human organization.

I have recently had conversations with a leader of management and a union leader which indicated that this sort of discussion was not all they needed. The first was with the President of a large corporation with plants in all parts of the country. His statement was this: "We think we have the best personnel program in the country. That is not just by accident. For the last fifteen years we have studied everything we could get our hands on about what other people were doing in this field. We have also conducted numerous surveys of the attitudes and reactions of our own employees. As President of the company I have taken a personal interest in this matter and have read summaries of most of the things that my staff has turned up. But here is what I notice. From this mass of material we have obtained numerous suggestions for improving our tactics, but we haven't got one major suggestion to guide our strategy. What we need in order to keep our strategy on the beam is a sound set of principles of human relations that tell us why men behave as they do. I can hire practical men who are able to devise incentive systems, promotion plans, job evaluation schemes, and benefit plans. But my responsibility as President is to see that these particular tactics are consistent with long-range strategy; and for that job I need principles, not a manual of operations."

A union leader occupying a high position in a major industrial union told me this: "A few years ago we had an organizing drive on in the South. I picked one of my best men who had had fifteen years of experience in organizing in New England and sent him south of the Mason-Dixon line. He was a successful guy in these parts—the best we had; but he failed down there miserably. What was his trouble? I would say it was this. He knew *what* to do but not *why* he did it. His tactics were okay in a way, and he used the same ones down there as he had used up here. What he failed to

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realize, and incidentally what I failed to realize, was that tactics are good or bad, not in themselves but if they are consistent with sound strategy. And to get sound strategy you have to be able to analyze why particular people in particular areas act as they do. You have to know what makes them tick."

All over the country I have met leaders of management and labor who have expressed the same conviction although in different words. They aren't dreamers or crackpots, these leaders. They are hard-headed practical men with jobs to do; but they recognize that being practical involves more than being practiced.

Who Is Practical?

It is normal in any field of activity to consider a man practical if he has the know-how on techniques. In industry, if he can tell you how to set up incentive systems, conduct job evaluations, set up foremen training programs, get sick benefit associations going, put out a good house organ, he is practical. Or a union leader is practical if he knows how to negotiate, how to get people to stick loyally by the union in a strike, how to conduct a successful organizing campaign. This is not a bad definition of a practical man either. If he couldn't do those things he wouldn't be very practical.

But there is another candidate for the title "practical man." He is the fellow who knows not only *what* will work but *why* it works; the fellow who knows the principles of human relations so he can predict whether a technique of dealing with human beings, successful in Elmira, New York, will work in the "X" plant in Bridgeport, Connecticut; the fellow who can predict whether organizing methods successful in Fall River among the rubber workers will work in Cleveland among the steel workers; the fellow who, as my corporation president said, knows enough about basic cause-and-effect laws in human relations so he can develop sound long-range strategy which keeps changing tactics on the beam.

Now the minute one mentions principles or theory, some one will say "That's ivory tower stuff." Well, since I have quarters in one of those ivory towers and am pretty familiar with what goes on there, I'd be the last man in the world to deny that charge. A lot of principles and theory are just that. They have so much ivy growing on them that if you plant them in the inhospitable soil of the world of affairs the ivy chokes them.

This matter is too important, however, to be sidetracked by words like "ivory tower" and "abstract theory." Practical men have responsibilities as leaders of organizations. Among their other tasks, they have to weld a crowd of individuals with all sorts of backgrounds and ambitions and personal characteristics into a working team. One practical way to meet that responsibility is to try out one technique after another until one is found that works. Another practical method is the one they use in solving their technological problems. In that job they make use of the principles of the sciences of chemistry, physics, and metallurgy. They wouldn't consider themselves practical unless they did so. Is it any less practical for them to get hold of the principles of human relations that will enable them to select, adapt, or invent techniques which now and over time have some chance of success?

I think I know the answer thoughtful management and union leaders would make to that question. But here's the rub. Where are those principles of human relations? I could suggest several sources, none of them completely satisfactory. We might call in the psychologist, the sociologist, the anthropologist, the economist, the political scientist, or professional men like doctors and ministers, and say, "What can you tell us?" As a colleague of these people I want to say that there would be real value in that method. They have done a lot of work on the determinants of human behavior that is potentially of real service. Why are the results of their effort not used more frequently? First because practical men don't understand their jargon; second because their conclusions and generalizations didn't grow out of the analysis of the kind of human relations with which leaders of managements and unions are familiar. It's too big a jump, for instance, from the rat cage or the Hottentot society or the "free competitive market" to your factories and union halls or the picket line.

Very well, let's turn to people who do speak your language, who do base their conclusions on experience with the kind of facts you have to live with, the successful leaders of management and labor. I've read practically everything they have written. I've tried to make it add up to a set of principles of human relations. Here and there I've struck pay dirt. But on the whole it doesn't add up. Why? Either these men don't state their principles at all, or for the most part their statements are so general and so unrelated to the facts that they record that you can't apply them to a specific set of facts.

What is the trouble here? It is not that these generalizations from either source are unplausible or the product of dreamers. The basic difficulty with them

so far as furnishing practical men with guideposts to action is this: they do not state in precise terms the causal relations between things over which you have some control and the reaction of human beings to those things. They do not attempt an explanation, supported by systematic analyses of observed facts, of why men behave as they do.

So, in our search for usable principles of human relations we are stumped both by the offerings of the academic and professional fraternity and those of the practical men. What can we do?

Need For a Partnership

I have a suggestion to make. I suggest we form a partnership, those of you responsible and trained for the practical details of human organization, and those of us trained to analyze those details. I suggest as the objective of this partnership nothing less than the development of a science of human relations which can be used to guide *human* engineering as the sciences of chemistry, physics, and metallurgy are used to guide mechanical and electrical engineering. I am suggesting that we join in making such a science of human relations a bridge between tactics and strategy in this field.

I want to say immediately that I have no hope that the organization of human relations can be reduced to an applied science. The variety of human needs and aspirations is so great, the circumstances surrounding the activity of any group so complex, that a science of human relations can be only an aid to artistry, common sense, vision, faith, courage, and the other requirements for effective leadership; but it is an essential and indispensable aid in the intelligent exercise of those capabilities.

In other words we'll have two objectives, both equally important, both equally practical. The first objective is to answer the question, "What aids and what hinders good team-work in an organization, in a company, in a union, or in the organized business which includes them both?" The answer to that question is the basis for tactics. The second objective is to answer the question: "What are the principles of human relations revealed by a study of this problem? That is, what basic cause-and-effect generalizations can be made between desirable or undesirable behavior and the factors that make people behave that way?" The answer to that question is the basis for long-range planning and strategy.

Requirements for Effective Partnership

How can we make that partnership effective? The most important thing is that we agree on the nature and structure of the thing we are studying. When we study human relations in a company or union what fundamental picture do we have in our minds of that company or union? One of the things that has kept our many observations from adding up to a set of usable principles is that we don't all have the same basic picture. To some a company is a production line, to others a big family, to others a crowd of difficult but promising individuals, to others a list of numbers on a payroll, to others a group of supervisors and employees. To some a union is a group of members, to others a revolutionary association, to others an insurance company, to others an army, to others a department of the enterprise, etc. Because they start off with different pictures, their observations have a different focus, and when they are through the reports don't fit together so that general principles can be formulated.

Let me try to make this problem clearer by an analogy with the sort of diagnosis and report my doctor gives to me after my annual check-up on, shall we say, my "physical relations." Here is what he is likely to say: "Your circulatory system seems to be in good order. Your blood pressure is okay. The blood itself is what it should be. Your respiratory system is okay. Your sight and hearing are about standard. Your digestive system is weak only in one respect—you don't seem to handle fats too well. We'll have to look a bit more into that. It may be your liver isn't functioning just right. You're a bit overweight for your height and age. Your nervous system seems in good shape. There are no irregularities in your bodily structure that indicate any internal growths, etc. In other words, old chap, you are in excellent health."

What I want you to notice about his report is that the doctor analyzes my degree of health—my physical-mental relations that is—systematically. His system is grounded in a definite conception of the nature and structure of the thing he is studying—my body. That body in his mind is an organism, a group of living cells and organs working together as a unit. And that working together is accomplished through the operation of a number of organizational devices, the circulatory system, the respiratory system, the digestive system, etc.

Now when we attempt to analyze the health of the human relations in a company or a union, what is going to be our picture of the nature and structure of the thing we are studying? That picture will determine what we look for, how we analyze and organize our findings, and whether we report our investigation in a way which is practical in helping to maintain or im-

prove the health of those human relations. Those of us at the Yale Labor and Management Center have come to a conclusion on that matter which guides our research. It is a conclusion which grows out of not only our training in social and psychological science, but our studies of companies and unions and our practical experience as consultants and arbitrators. It is a conclusion we share with a number of our colleagues in other universities. I think it will click with the experience of men of action. It is very simple.

Nature of the Object of Study

A company or a union is a small society, it is a social organism. As the body is a *physical* organism composed of cells which work together through the operation of certain organizational devices or systems, so the company or the union is a *social* organism composed of individual people who work together through the operation of certain organizational devices or systems. Now what are those systems in this social organism which bind the individuals together in a working team?

First is the *organizational charter,* the concept of the organization as a whole, its purposes, policies, significance, and the points of view and social philosophies to which its members are committed. The organizational charter includes the traditions, typical achievements and reputation, written statements and constitution, and the material and human symbols which make vivid and secure this concept of the organization as a whole in the minds of the members.

The second is the system of *functional specifications.* This is the definition of the functional roles to be performed by the several members individually and collectively with particular reference to their functional relationships with other members of the group.

Third is the *status system,* which organizes the members into a hierarchy of authority and deference and defines the privileges and responsibilities relevant to authority and deference which go with every position in that system.

Fourth is the *communication system,* by which the information required for effective working together is transmitted from one individual to another.

Fifth is the *reward and punishment system* by which individuals are persuaded or compelled to act in ways considered advantageous to the organization.

There are other systems such as *technology* by which individuals are related to each other by reference to the tools with which and materials on which they work. But these will do as illustrations.

Our basic conception of a company or union as a society or social organism, then, suggests a systematic outline of the aspects of that society whose efficiency of operation will be the object of our study.

That sounds elementary, doesn't it? Well, starting points and fundamentals are always elementary. But unless we have a common conception and understanding of fundamentals we will be hopelessly lost when we begin to rear a more complex structure of principles and practice on that foundation. Imagine how much of a contribution a group of doctors would make to a developing science of physical relations, one of whom considered the body to be an organism, another a machine, another a gaseous compound, another the battle-ground for devils and angels. A common agreement on the essential nature and structure of a company or union is essential for those who want their diagnoses and studies to add up, to be cumulative, to contribute to a developing science of human relations. Moreover, that conception has to square with facts.

Relation of Parts to the Whole

We can pursue this analogy a bit further in order to indicate another difficulty we have faced in deriving general principles from our many observations of human relations in industry. That difficulty grows out of the fact that most of our observations are about particular parts of the company or union set-up like incentive systems, benefit plans, house organs, dues-paying methods, parliamentary procedure, news letters, etc. We talk about them as things in themselves instead of units in an over-all functioning organization.

The doctor who is diagnosing the degree of health in my body considers the heart, kidneys, lungs, and other parts of the body not as isolated things but as units in one of his systems and of the organism as a whole. Their significance and influence in the general scheme of health is determined not only by what they are in themselves but the place they occupy in one or more of the systems. The lungs, for instance, are units not only in the respiratory system but in the circulatory system. We can't judge lungs as adequate or inadequate unless we know their functional relationship to these systems. Likewise the adequacy of any part of the company or union structure is known only when its place in and significance to an organizational system is known. Every one is aware, for instance, that an incentive plan is a part of the *reward system;* so is a wage scale, a pension plan, a seniority arrangement. If, however, we are looking at the realities of the life of a company or union society we see that they are also important elements in the *status system.*

Now this begins to be a bit more complicated, as reality must become. The complications, however, do not need to worry us as long as we have a sound systematic pattern of the real nature and structure of our company or union society by reference to which we can analyze and understand them. In any case the complications involved in getting basic relations between the parts of a social organism straight in our minds is nothing compared to the practical complications which arise if we don't have them straight; when, say, we modify an incentive system without recognizing that it has a very important relationship to the status system or without knowing what the actual and experienced status system is in the company.

We start then with the basic conception of our factory or union groups as small societies. That is, they are groups of individuals bound together in a working team by bonds or devices of organization. The significance of any part of the organizational structure can be determined only by considering its relationship to these bonds.

Tests of Efficiency

Our next difficulty in making our observations add up to something is that we have not developed a uniform set of tests or standards by which we can appraise whether that society and its organizational devices are operating well or poorly, whether they are healthy or unhealthy. We need a set of such tests or standards just as a doctor needs them; and if we want our observations to reenforce and supplement each other we will all have to use pretty much the same set.

Where will we get our tests for *the organizational charter, the functional specifications, the status, communication, and reward and punishment systems*? We don't start from scratch in this matter. There is a lot of accumulated experience in the administration of organizations. Some of it has been systematically recorded, particularly with respect to the communication and reward systems. Experienced men have rule-of-thumb tests which govern their modifications of those systems in their own organizations. There are some management consultants who can give some pretty sound advice on this matter. I have one suggestion for a set of tests which I think will not only prove of practical utility for men of action, but which are essential for the purpose of building a science of human relations. In general these tests ask the question, "Do these organizational devices or systems help or hinder people to realize their goals, to achieve their standards of successful living?"

The reason for this type of test is clear. The participants in a company or union are trying to live out a satisfying and successful life in the midst of that society. They have certain goals or standards of satisfactory or successful living, many or most of which they share with the rest of the members, by which they measure their degree of achievement. From the point of view of the members of an organization, that organization is healthy if it helps them to achieve those goals, and it is unhealthy if it frustrates them. But don't think for a minute that such tests are of personal interest merely to individuals. They are equally tests of the productive capacity of a company or the strength of a union for at least two reasons.

The first is that productive capacity and strength are the product of teamwork on the part of all employees or members. It is a pretty reasonable statement of probable cause and effect to say that goal realization promotes, and goal frustration retards, good teamwork.

The second is that when there is too great a disequilibrium between goals and resources people are spurred to put their energies into restoring the equilibrium, that is bringing their goals and the resources available in the company or union closer together. Either they wrestle with lowering their goals so they can be reached, or they go to work individually or collectively to correct the inadequacies in their society so they can reach the ones they have. The first is a very agonizing process scarcely conducive to whole-hearted devotion to the tasks and purposes of the organization. The second is often accompanied by feelings of resentment against the organization as such. In either case a lot of energy otherwise available for making a profitable company or a strong union is shunted off into action which is non-relevant and frequently damaging to those purposes.

I would be the last to underestimate the value of dissatisfaction in stirring up unused sources of energy in people. It's one of the essential elements in making any society vital, progressive, and capable of growth. We aren't looking for Nirvana where all struggling shall cease. We aren't looking for a lotus powder which will make men forget their high destinies or make them satisfied with limited horizons. But frustration is not only a stimulant to effort, it is an opiate to effort.

Any company or union that isn't constantly trying to correct inadequacies in its organizational devices because a dose of frustration develops character, initiative, and effort reminds me of my cousin Emil. He is a Norwegian of the old school. He boasts he has never consulted a doctor. He is crippled up with arthritis,

and I suspect he has stomach ulcers. But consult a doctor, though he is frequently racked with pain? No sir! "If you have pain," he says, "fight it. Don't ask for help. Fight it. It makes you strong." I admire his courage. I question his wisdom.

So I suggest that as a first step in our research we get a clear picture of the society which is the company and the union and of what its organizational devices and systems are in the actual experience of the participants at all levels (not as they are presumed to be from the charts on the president's wall). As a second step I suggest that we set up a set of tests for them which will make us aware to what degree each of them satisfies the major goals people have.

To the system of *job specifications* we put a series of questions to test whether or not it helps the participants to achieve their goals of respect, creature comforts, control, understanding, capacity performance, integrity, security, progress, and justice.*

To the *status system* we put questions serving the same purpose, then to the *communication* and *reward systems,* the *organizational charter, technology,* etc.

Nature of Research Results

Now with that conception of our problem and that systematic framework for study we are ready to begin. I won't go into the problems of sampling and interview methods. Those are research techniques. But suppose we have gone ahead and completed our investigation and gathered our material and have it summarized. Where do we stand?

At this point we have a pretty good picture of the actual structure of human relations in the organization, and of the reaction of the participants to it. Moreover, that structure being what it is, we can suggest why the reactions were favorable or unfavorable in terms of what goals were brought within reach or were out of reach. Now we are ready to make some preliminary conclusions like the following. "In Department A the *status system* and *communication system* are inadequate because they keep individuals from achieving their goal of respect for the following reasons. . ., and keep them from achieving their goal of security for the following reasons. . . ."

I shall not go into the further steps by which we check these results and compare them with objective indicators of good or poor team-work such as absentee, turnover, production, and grievance figures in the case of the company, and comparable indicators in the case of the union. I shall be glad to furnish any who desire it with a more detailed description of the methods and procedures employed.

I just want to observe that, to this point, any manager or leader who wishes to make practical use of such findings will find that possible. He can conclude, "My production and turnover figures in Department A indicate that team-work is at a low ebb. This analysis suggests that the trouble focuses in the status and communication systems. It also shows up in some detail why those systems are unsatisfactory from the point of view of the members of that department. My problem is to see what I can do about modifying those organizational bonds so that those inadequacies will be removed." The union leader facing poor team-work in a local would be able to chart his course in the same way.

In other words, from the point of view of the participating company or union there is no ivy growing on the results of such an investigation. It is a diagnosis which can be made the basis for immediate decision and action.

The Scientific Objective

But this partnership I am suggesting is not to be formed for the purpose of providing a service to particular organizations, though that service is an important incidental value. I'm not suggesting another type of consulting firm to companies and unions. I am confident such a service could be sold. But it is not for sale. Those of us in this partnership have a broader objective. We want to analyze these materials and get out of them generalizations and principles that will be of service to *all* organizations. We aren't hired troubleshooters. We want to provide thoughtful and active men, charged with great responsibilities for organizing human beings into effective teams, with principles grounded on observed facts. We have no lower aim than making a substantial contribution to a growing and usable science of human relations.

The work of the social scientist has just begun. He must now go to work on this material, compare observed results in one department with those in another. He must explain observed differences in terms of the causes suggested by the data. He draws up preliminary generalizations about cause and effect. He studies the relation between what men were observed

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* These are the major goals that we have found present in our investigations of worker, management, and union leader groups in England and the United States since 1932. We make no claim that they are complete or universal, or that they will not be substantially modified by additional research. An explanation of their content will be found on Pages 12ff. of the Yale Labor and Management Center publication, *Adaptive Human Behavior*, and in two articles by the author, "Need for Scientific Study of Human Relations in Industry," ADVANCED MANAGEMENT, Vol. XII, No. 2, and "Teamwork in Industry," *Scientific Monthly*, Vol. LXVI, No. 3. Reprints of the above articles may be obtained from the Yale Labor and Management Center, 333 Cedar St., New Haven, Conn.

to do and what goals they had, and the way their social environment in the company or the union affected their achievement of those goals. And all the time he keeps asking, *"Why did those people behave that way?"* He sharpens his terms, he fills them with vivid content from actual life. He corrects his basic conception of the structure and dynamics of human relations. He casts a critical eye on his methods. Then he is ready to tackle the next investigation, take his generalizations and principles into the next company or union laboratory and put them to a further test. So the process of building a science goes on.

In this manner the man of action and the social scientist can go on together, partners in the development of immediate guides for improvement of team-work in organizations and in the slower but equally important process of developing a science of human relations.

That science will not displace experience as a guide to action. It simply broadens experience and puts the conclusions and principles for action drawn from it on a more substantial foundation. Its basic principles do not constitute a manual of techniques, but they do provide guides for understanding why some techniques work and others don't, for the correction of old techniques or the invention of new ones so that they are more consistent with the laws of human behavior and growth. They do furnish a basis for sound judgment on the planning of present and future arrangements designed to maintain and improve team-work in human relations. In other words the aim is to provide the man of action with a basis not merely for immediate tactics but for long-range strategy. No man is ultimately practical who has not the capacity to be both a tactician and a strategist.

The Public Interest

In an economy which has placed its confidence in the potential capacity of individuals to work and work together voluntarily, the leaders and organizers of human effort must understand these cause-and-effect relations between what people want and what they are willing and able to do. This is no slave economy. This is no autocracy in which dictators depend on compulsion and fear to stimulate the collaboration of the people involved. Our economy is in life-and-death competition with those which *are* organized on that basis. We are committed to private enterprise and democratic life. Our chances for making good on that commitment are equal only to our understanding of the principles of human relations by which effective team-work within that framework can be developed. There is no more hope that the strategy for such an achievement can be developed by trial and error with specific tactics, without basic study of cause and effect in human relations, than that a nation of blacksmiths could have developed our effective steel technology without the basic sciences of chemistry, physics and metallurgy.

I am making no plea for consideration from academic men. Like every one else in a free society, they must prove their worth or go under. But I am appealing to your common sense and deliberate and responsible judgment. You are charged with leadership not only in administering tactics but in planning strategy. Do you believe that leadership in this task can be effective without the type of basic research in human relations we have been discussing?

It goes without saying that the hopes of freedom-loving people in all parts of the world, even in those parts in which the individual is counted as a pawn in the political and economic affairs of the state, are pinned on the success of our efforts in developing productive and humanly satisfying team-work. Our tactics and strategy in technology have been tried and tested and have gained the admiration of the whole world. Our tactics and strategy in democratic human relations have been tried and tested and found wanting, most of all by ourselves.

I want to place before you for your studied judgment and response a challenge. That challenge is this: That we test our tactics and guide our strategy in human relations by the same scientific effort on which our remarkable achievements in technology have been based. That is an effort in which the man of action and the social scientist must join in effective partnership. It is my firm conviction that either the future will count us effective in that partnership, or we may not be there to be counted.

With new hazards to employees' health coming to light, government, industry and labor are going forward in the fight to improve working conditions. One of the most effective steps toward improving human relations is the institution of a comprehensive program for industrial health.

What's Happening in Industrial Health?

By JOHN F. McMAHON

INDUSTRIAL health is concerned with the well-being of men at work. This includes such varied activity as: the proper selection and placement of people; plant design that "builds in" health and safety; prevention of occupational disease; improvement of physical working conditions, including dust and fume control; ventilation and attention to lighting, noise, color etc.; reducing the exposure of men to heat in the "hot" industries and the design of jobs in the light of man's physical capacities, so as to insure top performance.

It must be evident from the above that industrial health, applied in its broad sense, is not only good business but comprises the flesh and blood of human relations.

In considering the question, "What's happening in industrial health?" let us first review some recent strictly medical developments respecting occupational health.

Beryllium.

Certain compounds of beryllium are alleged to be the cause of a lung disease which first came to attention during the war. There have been some 200 undisputed cases, a number of them fatal. The immediate cause of death is heart failure. These cases have occurred in the manufacture of fluorescent lamps, in the use of beryllium as a copper alloy and in the production of neon light tubes. Extensive research is under way to determine the specific cause of this disease, including work supported by the Atomic Energy Commission, which is a large user of beryllium. The metal is probably destined for increased use with copper as a hardener and with other metals, including stainless steel, lead and silver. The welding of any of these alloys should certainly be controlled until more is known about the health effects of beryllium.

Shaver's Disease.

Shaver's Disease is the name given to cases of a rapidly developing lung disorder which was first identified during the war. A number of cases developed in plants of the artificial abrasive industry along the Niagara River. The cases occurred about electric furnaces from which a very fine fume escaped. In the advanced stages the lungs of the affected individuals collapsed. A few deaths have been reported. One theory is that the disease is caused by fume from silica fused with other materials in the furnaces. This is conjecture since the particles of fume are so small they cannot be adequately studied with present techniques. Ventilation designed by Industrial Hygiene Foundation promises to control the harmful exposure; meanwhile, a close medical check is being maintained.

An abnormal lung condition, occasionally of a severe nature, has been found recently among workers in diatomaceous earth, but the causative agent is still a matter of investigation and research.

A fairly common metal, in certain forms, is presently the subject of attention by the producers and by health

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agencies on the basis of lung cancer cases which have developed in exposures where this substance was present.

Silica and Lead.

Silica and lead, for all the attention they have received, continue to pose many questions. On occasions we find silicosis and lead poisoning where, according to present standards, it should be impossible for such diseases to develop; conversely, on other infrequent occasions, such cases sometimes fail to develop where, according to all experience, they should. Thanks to the engineer, however, harmful exposure to these substances can generally be controlled.

These exceptions that depart from form are not numerous but there are enough of them to indicate that we still do not know all the facts. For instance, cases of silicosis, or at least some lung affliction which is called silicosis, continue to develop in the soft coal fields, especially in Southern West Virginia. And yet, on the basis of present-day information, this should not be, since the miners seldom work in siliceous rock and have no known exposure to silica save from the sand used on the tracks. The answer, of course, lies in more research. Our organization is now undertaking certain studies which promise to fill in some present gaps in our knowledge respecting the behavior of particles in the respiratory system.

Sodium fluoride.

Sodium fluoride has been the subject of controversy in sectors of the steel industry. Small quantities of this chemical are thrown into the molten steel to improve the quality of the metal. Sodium fluoride gives off a pungent, irritating odor. In some plants the workmen claimed this was a dangerous poison. The U. S. Public Health Service (Industrial Hygiene Division) undertook an investigation at the request of the United Steel Workers—C.I.O. and Republic Steel Corporation. The Public Health Service found no health hazard from sodium fluoride but called attention to other conditions causing "physical discomfort to workers."

Radioactive substances.

Radioactive substances are already flowing into use in industry. By early spring, 1948, more than 2,000 shipments of radioactive isotopes had been made from the Atomic Energy Commission to research centers and industries in this country; at present they are used industrially for research and for quality control. But the atom has gone to work in industry. That demands a whole new chain of health protective measures. In using radioactive substances, as in operating chemical plants, it is not a question of whether or not a company wants a health and safety program. They have them and they work—or else! Of this subject we are destined to hear much more later on.

These statements on beryllium, Shaver's Disease and the other problems indicate some things that are happening in industrial health, mainly from the medical standpoint. What is happening on the legal side?

Legal Development

On December 15, 1947, the New Jersey State Department of Labor announced the adoption of a new industrial health code fixing the limit of concentrations of "harmful vapors, gases, fumes, dusts and radiant energy" which will be allowed in places of employment. The Ohio Health Department has adopted an industrial health code which became effective January 1, 1947. A number of the industrial states now have or are in the process of developing such regulations, and the American Conference of Governmental Industrial Hygienists has prepared a "model code."

The 14th National Conference on Labor Legislation, held in December, 1947, urged that "each state have a basic labor law providing safe and healthful work places," asked for "competent and uninfluenced personnel to assist in developing and enforcing safety and health regulations," and "strongly recommends that protection of safety and health of workers is a labor department function." We are witnessing competition between the health and labor agencies for the regulatory powers to govern industrial health.

A further illustration of legal developments in this field is seen in the fact that most of our states—thirty-nine to be exact—now grant compensation for occupational diseases. New occupational disease laws were enacted in six states in 1947. Practically all states now have divisions of industrial hygiene in their health or labor departments. Seven states enacted additional second injury funds to compensate partially disabled workers who suffer subsequent injuries. The purpose of such funds apparently is to encourage the employment of partially disabled persons by protecting the employer from the risk of paying for total disability. As a sample of the public pressure in this field, during the month of January, 1948, forty-five bills respecting workmen's compensation were introduced in the legislature of just one state—Massachusetts.

The medical and legal developments which we have cited are only segments of the industrial health sub-

ject. We may properly ask, next, "What is industry doing about it?"

Industry's Activity

Industrial Hygiene Foundation recently completed a two-year field survey of industry's health facilities—the set-ups and functions of health or medical departments, administrative procedures, costs, and activities. This study conducted by Dr. C. O. Sappington of Chicago, covered about 280 different plants in thirty-three states and in all types of industries. The project was designed to disclose a cross-sectional view.

Here are some of the facts unearthed: Not only were physical examinations the general rule, but, in about half of the plants surveyed, the examinations were used as a tool to aid in the successful job-placement of the worker. And this is as it should be because our job requirements, about which so much is heard, must finally come face-to-face with man's innate physical and mental abilities and inabilities. Too often the designer of the job overlooks the design of man. After all, man's Creator was a pretty good engineer, too! The trend toward relying more on the physical examination in job placement has been accelerated by the successful job placement of the so-called physically disabled. Actually, every individual is disabled in some degree.

Improving working environment.

Returning to findings from the field survey, and the story of what industry is doing, it was disclosed that fifty-four percent of the plants covered had industrial hygiene services, in some form; that is, attention to the proper control of the working environment, which is the forte of the chemist and the engineer. (It is the chemist who detects and determines the presence of a poisonous solvent or dangerous metal fume in the workplace and it is the engineer who designs measures to bring this toxic exposure under safe control.)

A majority of the plants were well staffed with professional medical personnel and well equipped with industrial health facilities.

While on the subject of working conditions, it is pertinent to mention that heat is as common a factor in heavy industries as dust or smoke. Industrial Hygiene Foundation is now studying sources of radiant heat in one industry. Air temperature may register only "75" in a location where the radiant heat would make it impossible for people to work. The object of the study is to attempt to reduce the exposure of men to this type of heat which is untouched by ventilation and air cooling.

"Cost figures."

An interesting sidelight was found in a chemical plant where the thrifty manager calculated that when an employee is at home sick the cost to the company is at the rate of at least one dollar per hour. On that basis, any substantial reduction in sick absenteeism over the period of a year, amounts to a sizeable sum of money. The same company figured that each turnover case cost it $100. On the basis of a dollar per hour as the cost of sick absences, and $100 per case for turnover, the firm concluded that as a result of reductions in both of these losses, it saved $4.08 for every dollar spent on its industrial health program. In this connection, a number of industrial concerns stated that better working conditions are necessary to attract a desirable type of worker and that the better the worker, the better the product.

Job design and the worker.

The Army and Navy are giving considerable attention to designing jobs and machines with more thought to the operator. During the war the Armored Force increased the accuracy of fire through systematic study of the design of guns and their operation from the standpoint of man's physical capacities—the readability of a dial, the location of a lever, the shape of a handle or a gunsight. These were vital items when they "paid off" on who fired first.

General Motors recently produced a film in its plants to show the shortcoming of machine tools from the standpoint of machine operators. The film was prepared as an educational medium for representatives of the machine-tool industry. Control levers and buttons, the firm contends, should be within ready reach of the worker so as to save steps. Workers should be able to sit or stand naturally at machines. A company in the textile field that moved the seats of the operators two inches closer to the machines reduced labor turn-over and absenteeism radically and increased production; everyone benefited.

Engineers who study the subject say that "the more we can cut down the human energy needed for each operation, the better a man can do his job: he'll feel better, turn out more work and spoil less material."

As another progress step in this field, Industrial Hygiene Foundation and the University of Pittsburgh School of Medicine in March, 1948, sponsored a conference on industrial physiology and human engineering. A selected group of physiologists, psychologists, engineers and personnel men were brought together around the same table to exchange experience and to

point the way for further study and further conferences. The Foundation and the Medical School are hopeful of embarking upon fact-finding searches in the field of men and machines.

Frank W. Abrams, Chairman of the Board of Standard Oil Company of New Jersey, recently stated: "In the early period of our industrial society, attention was focused on the machine. Today, we find that industrial management is focusing attention more and more upon the people who operate the machines. Human relations are one of the chief interests of industrial executives today, and medicine in industry is one of the most important expressions of that interest."

Labor's Activity

In June, 1947, the Anthracite Health and Welfare Fund announced a grant of $575,000 to the Jefferson Medical College in Philadelphia for "a study of miners' occupational diseases."

In Columbus, early in 1948, the Ohio C.I.O. Council conducted a two-day safety clinic. More than 200 delegates attended, representing thousands of employees.

In Detroit, the Health Institute established by the United Auto Workers, has recently announced "new classes for health and safety education" which are being given in collaboration with Wayne University.

Health and welfare funds, and other social-security benefits are being increasingly sought by unions in their negotiations with management.

These facts indicate the increasing interest and activity of organized labor in industrial health. The sincere interest by labor in this subject is highly desirable. Employers are held responsible for maintaining health and safety in their plants. But such programs, however comprehensive, are ineffective without the cooperation of the worker.

What These Things Mean

The foregoing is largely a factual report on current events. Now what do these things mean, what do they add up to? Of course we get a different view of the mountain depending upon where we stand. From our point it looks like this:

Suddenly, there has been a great awakening upon the part of top industrial management generally to the all-powerful force called "human relations," or the human factor in production. This force, greater than atomic power, has been largely overlooked, obscured by the old "master-servant" philosophy which is now as obsolete and impractical as the pyramids. We are finding that production comes from people, not machines.

"Human relations" has become a by-word but it is a nebulous, ethereal term. Specifically, how does a company go about improving its human relations? Comprehensive industrial health programs afford one tangible tool because industrial health is concerned with flesh and blood and brain.

To give but one support for this statement, a large corporation finds that eighty-five percent of the calls upon its medical department come from only thirty percent of the plant population. A good portion of that thirty percent is made up of people who have mental rather than physical ills, troubles at work and at home, worries and heartaches. Incidentally, it has been found that one out of every fifteen workers per shift will visit the medical department regardless of the industry. This gives a glimpse of the opportunity that industrial health offers for improving human relations.

It is apparent that the world is in the midst of a social revolution. We need only look at Europe for the proof of that, if it is necessary to look that far from home. In the United States the average so-called common man has more comforts and advantages than the royalty of a few hundred years ago who lived in wind-swept castles surrounded by garbage and bounced in wooden wagons over rutted roads. We make what men want, the comforts of life; something over fifty percent of the world's productive capacity is ours and we sell what we make for a profit. But, in spite of all this, apparently we have failed to sell our system, the organization of government and economy which has made our country the poor man's paradise. Most of us learned that the proof of the pudding is in the eating—evidently it is not. There is still a "selling job" to do and the time is today.

One of the best ways of doing that job is by increased intelligent attention to people. And one of the best ways of doing that is by increased attention to industrial health.

In the "Job Classification Plan" being used by leading steel companies, statistical methods were used as a basis for factor weights and other elements previously determined by rule-of-thumb methods. The author describes the twelve steps of this plan which, he says, accurately reflects the wage structure of the industry and has the additional virtue of simplicity.

Statistical Methods in Job Evaluation

By PAUL M. EDWARDS

THE preparation of job evaluation plans in the past has been essentially an empirical procedure. Individuals with a questioning mind have wanted something better than the usual practice of using "cut and try" methods, "pooled judgment" of practical men, and the acceptance of relationships from older plans. Several attempts to use mathematical means in the solution for the best factor weights have been published but these investigations have led to inconclusive or negative results.

In the development of the "Job Classification Plan" adopted by most steel-manufacturing companies and the Steelworkers' Union, the basis for the factor weights and several other features of the plan were determined by statistical methods. Much progress was also made toward answering factually some of the other perennial questions relating to the ideal number of factors, weighting of degrees within factors, definition of degrees, and amount of error occurring in evaluation.

Paul M. Edwards, a partner in the Pittsburgh management engineering firm of Edwards & Barnes, based this article on the methods and results of the "Cooperative Wage Study" which was organized in 1944 by twelve of the largest steel companies to eliminate wage inequities and job-title inequities among the different companies. The resulting plan was accepted by the United Steelworkers of America—C.I.O. and has been used in the evaluation of the jobs of nearly five hundred thousand steel employees.

From this and subsequent work in the development of evaluation plans by mathematical means, a step-by-step pattern for such development has been evolved and is outlined here.

In presenting the steps in the development listed below, an attempt has been made to condense a large volume of work into a relatively short article. For this reason, those steps which are common to most methods of development are handled very briefly. For instance, the problem of organization is not considered here, inasmuch as this phase of the development is stressed by most writers and also because several types of organization may successfully be adopted. This condensation is not intended to slight the importance of these steps. The major space available has been used to cover those parts considered new or not touched on in previous publications.

Outline of the Development Procedure

The logical steps in the development are:

Step 1: Select the field of jobs to be covered.
Step 2: Select the most likely factors and define them.
Step 3: Select a sample of jobs representative of the field.
Step 4: Describe the jobs (including qualifications by factors).
Step 5: Rank the jobs in each factor.

Step 6: Group the job rankings into degrees.
Step 7: Rank the jobs in total by their rates.
Step 8: Group the total job rankings into labor grades.
Step 9: Solve for the weight in labor grades of each degree in each factor.
Step 10: Define each degree in each factor in terms of work elements.
Step 11: Assemble a working evaluation manual.
Step 12: Organize for and execute the evaluation program and provide for its long-term continuation.

Step 1: Select the field of jobs to be covered.

This paper deals with factory jobs. The principles, however, apply to any desired unit of jobs or positions.

Step 2: Select the most likely factors and define them.

While as few as three factors will give a reasonable evaluation plan and as many as thirty-five have been used, experience indicates that eight to ten factors are most practical. The following factor names are suggested:

1. Mentality required;
2. Experience and training;
3. Manual skill;
4. Responsibility for materials;
5. Responsibility for equipment;
6. Responsibility for production;
7. Mental effort;
8. Physical effort;
9. Surroundings;
10. Hazards.

One of the advantages of using mathematical means for the determination of factor weights lies in the fact that any number of factors that might be suspected of having significant weight could be incorporated into the solution. Those would later be dropped where the actual weight proved to be insignificant. In the factors listed above, "mentality" and "experience" could be treated as one, inasmuch as the correlation between them usually exceeds 0.9. These factors do have a large share of the total weight, however; and it is good common sense to separate them and to take two looks at mental attributes, even if from only slightly different angles. If sheer simplicity is a prime objective, it is possible to combine *1* and *2*, *4* and *5*, and *9* and *10* without doing material damage to the job rankings which are finally arrived at. However, most job analysts, if well chosen, are analytical by definition, and they find a plan more objective and more easily used if these readily separable factors are handled individually.

Each factor must be carefully defined.

Step 3: Select a sample of jobs representative of the field.

The sample should be large. It may contain several thousand jobs or all the jobs in the field. Twenty jobs are not a sufficient sample on which to build a sound evaluation plan.

Step 4: Describe the jobs (including qualifications by factors).

Job descriptions should be complete but concise.

Step 5: Rank the jobs in each factor.

This step is the heart of the development. The job having the greatest amount of the particular requirement is placed at one end of the scale, and the job having the least at the other end. All other jobs are ranked between the two extremes in order of the amount of that requirement. The ranking must be done conscientiously and the rankings of different individuals and groups reviewed and correlated. Several reviews may be necessary before the rankings are satisfactorily "shaken down."

Step 6: Group the job rankings into degrees.

Usually the natural degrees are fairly obvious. Where there is doubt as to the number, the larger number of smaller degrees should be used, as they can readily be combined later, while much more work is involved in later separation of one degree into two or more.

Step 7: Rank the jobs in total by their rates.

All of the jobs are arranged in order of their hourly rates. If individual rates are paid, the effect of the individual increments above or below the "going rate" must be eliminated or compensated for. This is also true of earnings above normal base rates from wage incentives. If there are no base rates, as is true in some cases, the equivalent must be developed from the pattern of earnings.

If some inequities are recognized before evaluation or if some general modification of the wage structure is desired, the relative ranking of individual jobs or groups of jobs may be modified at this stage of the

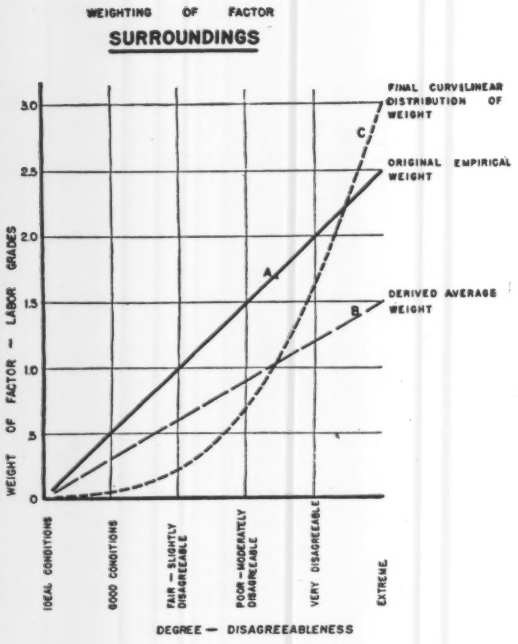

Figure 1.

development to achieve the desired result. It should be pointed out that promiscuous tampering with broad relationships in existing wage structures is dangerous. The modifications advocated should be confined to relatively small changes in the rank order of individual jobs or small groups of jobs.

Step 8: Group the total job rankings into labor grades.

The entire length of the scale of rates is divided into convenient increments. There is nothing scientific about the selection of the size and number of labor grades. It is purely a matter of convenience and may be set up in equal increments or in some geometrical progression. A series of equal increments seems to get the best reaction from employees. Three- to five-cent increments are common and practical.

One improvement offered by mathematical development of evaluation factor weights is the ability to simplify the plan by making the evaluations directly in labor grades. Instead of points, the plan credits the various job requirements with labor grades and fractions thereof. In the elimination of evaluation points, one of the complexities of conventional plans is removed with the elimination of a common objection to evaluation.

Step 9: Solve for the weight in labor grades of each degree in each factor.

The labor grade to which any job is finally assigned is the sum of the labor grades credited to the job in the various factors. To solve for the best weights—those which would yield the smallest total deviation from the wage structure while eliminating the inequities—the total labor grade of each job is equated to the sum of its parts, thus:

(Job A) Total Labor Grade = Degree assigned in Factor 1 x Weight of Factor 1 in Labor Grades plus Degree assigned in Factor 2, etc.

(or)

$$\text{Total L. G.} = D^1W^1 + D^2W^2 + D^3W^3 \ldots \text{etc.}$$

Each job in the sample is represented by such an equation. The solution for the best factor weights falls into three steps:

1. The solution for linear factor weights by the method of multiple linear correlation. This involves the compilation of "normal equations," one for each unknown factor weight, and their simultaneous solution to determine the average weighting of each factor.
2. The elimination of distortions in the linear factor weights resulting from intercorrelation between factors. When the coefficient of intercorrelation between two factors approaches 0.9, weight may be shifted from one to the other freely with little or no effect upon the total evaluations resulting from the plan. One of the factors may even have a negative weight, while the other carries the normal weight of both plus enough additional to offset the negative component. There appear to have been an appreciable number of investigators who proceeded to this point but were dismayed by the apparently illogical results and gave up or bogged down. The use of the "method of orthogonal coordinates in linear regression" eliminates the effect the interaction of one factor has upon another and yields results which are workable and which appear logical.
3. The third step distributes the average factor weight derived in Steps 1 and 2 in the most appropriate manner among the degrees of each factor. This is done by the methods of curvilinear correlation. The results of this final step indicate that many of the empirically developed plans have sub-

stantial deviations from the best distribution of weights among the degrees within the factors.

The chart, Figure 1, gives an example of the results of this solution. The factor "Surroundings" usually has from three to six degrees used in measuring the extent to which the surroundings, such as heat, wet, noise etc., make the job disagreeable. Usually a rather light weight, approximating ten percent of the total points in the plan, is assigned to this factor and distributed in a straight-line proportion among the degrees. It is shown as *Curve A*. This distribution has been used obviously because of a lack of any other basis. With a little consideration, the fallacy in this distribution may readily be seen. Ordinary factory conditions usually rank about one-third of the way up the scale, resulting in thirty-three percent as many points as the job having the worst conditions. When this is true, the worst conditions actually score only two-thirds of the apparent weight of the factor more than the job enjoying ordinary conditions. The actual rates developed by supply and demand and bargaining in years past have recognized the nature of the problem better than the empirical job evaluation plans; because, when the weight existing in actual rates is derived, the shape of the weighting, as shown in *Curve C*, reflects the fact that ordinary working conditions call for little or no increment over ideal conditions, but that extreme conditions of disagreeableness require a heavier weighting, compared with ordinary conditions, than any job evaluation plan has used. This high weighting at the extreme of the factor applies, of course, to a very few jobs, and many plants would have no such conditions. This also serves to illustrate the fallacy of comparing plans by means of the maximum values in each factor. In this case the maximum weight has increased only twenty percent between the original empirical weight and the final curvilinear weight, but the *difference* in scoring from the third to the sixth degree has increased almost one hundred percent. This is the only true means of comparing relative factor weights.

In the case shown, since the weights derived for the lower degrees are negligible, the first two and possibly three degrees should be combined into one. This is another way in which the plan may be intelligently simplified.

The curvilinear weightings for the other factors are derived by similar means.

The amount of work involved in the solution outlined above is large. If the sample consists of more than one hundred jobs and more than eight factors are used, mechanical computation becomes a virtual necessity. The problem may be solved with somewhat less work by the increased use of graphic methods, but more use

EXAMPLES OF DEGREE DEFINITIONS

Factor: Manual Skill

(1) "Some, More, Most" Method	*(2) Bench-Mark Method*	*(3) Job Element Method*
DEGREE I Very little manual skill.	Common Laborer Messenger	Use heavy tools, such as bars, shovels, etc., in the performance of rough tasks. Handle ordinary material manually. Operate simple on-and-off switches, valves, and lever controls. Sweeping.
DEGREE II Some manual skill.	Mechanic Helper Tractor Operator Light Drill Press Operator	Use gauges and small tools in a routine manner. Operate variable controls, such as rheostats, throttles, and levers, to control moving equipment, such as cranes and automotive equipment. Make simple, routine set-ups to machines.
DEGREE III A high degree of manual skill.	Machinist Carpenter Bricklayer	Use tradesmen's tools in a wide variety of difficult tasks. Forge complex shapes without special dies. Finish complex molds, cores, etc.

(Note: For the sake of brevity, only three degrees are shown.)

of judgment is required, and the results are more liable to question.

Step 10: Define each degree in each factor in terms of work elements.

In order to interpret the plan with the maximum consistency, the degrees within each factor should be defined in terms of "job elements." Field experiments with different types of evaluation plan indicate that the use of simple elements not necessarily related to a specific job give the highest degree of consistency. Three types of degree definitions are recognized: (1) the "some, more, most" type of definition; (2) the use of bench-mark jobs; and (3) the use of specific job elements. The "some, more, most" type can only be used with reasonable consistency by one evaluator, or two or three if in constant contact for correlation. Such consistency can only be maintained for a limited time.

The use of bench-mark jobs is the final criterion in all evaluation work, but their use in a widespread manual leads to misinterpretations because of the differences in job content of jobs having the same job titles.

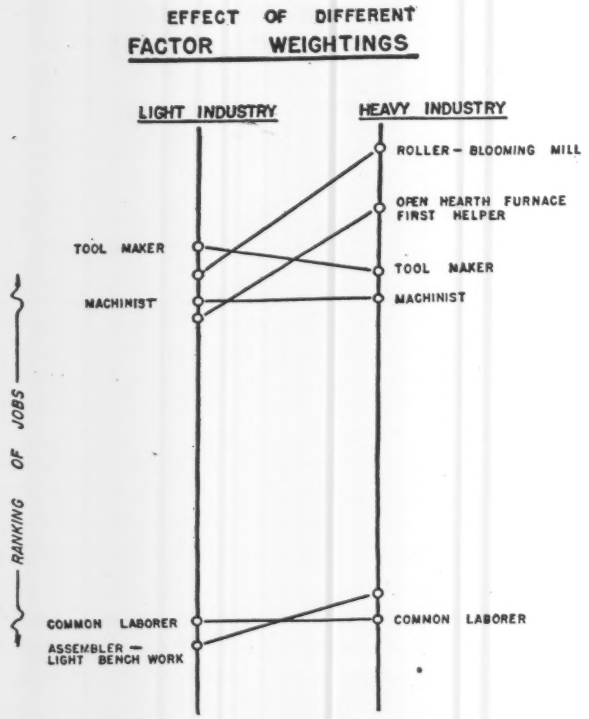

Figure 2. This chart illustrates how the use of improperly adapted evaluation plans may distort job relationships.

The use of "job elements" as guides has worked out best. An example of the three types is illustrated in the table of "Examples of Degree Definition."

Step 11: Assemble a working evaluation manual.

A manual should be prepared because many people will be required to refer to the plan over a long period of time. The manual should be as simple as practical, considering the number of people who will use it and the scope of its use.

Step 12: Organize for and execute the evaluation program and provide for its long-term continuation.

Many papers and books have been written treating this phase of job evaluation in detail. The importance of intelligent administration cannot be too heavily stressed. However, because of space limitations, it will not be dealt with here.

Summary of Advantages

A plan of evaluation developed by mathematical means around a factual framework has two prime advantages over the empirical plan—an accurate reflection of the wage structure and intelligent simplicity.

Those advantages deriving from an accurate reflection of the wage structure on which the plan is built are listed here.

1. The plan fits the needs of the unit of industry for which it was designed. Appreciable distortions in the wage structure have been found to occur as a result of the use of a plan improperly weighted. This is probably one of the chief reasons for lack of acceptance of any plan in the steel industry when factor weights reflected those required in light industry. The plan now widely accepted is built upon the rate structure of the steel industry. Figure 2 illustrates an actual occurrence in a company where a large sample of jobs were evaluated by two different plans, one fitted to heavy industry, the other to light. The point or rank scales of the two plans have been made comparable by setting the evaluations of the jobs of "common laborer" and "machinist" opposite each other on both scales. Both of these jobs are common to light and heavy industry, and both should be evaluated properly by either plan.

Jobs having exceptionally high skills, such as the tool and jig designer, are favored by the light industry scale, while those jobs in heavy industry which carry exceptionally high responsibilities, as

for the operation of large furnaces and rolling mills, do not receive proportional credit because they cannot receive more than the maximum provided for in the light industry plan. The plan for heavy industry provides the necessary credit. On the other hand, the plan for heavy industry does not recognize values in many factors lower than those for common labor, although it is readily recognized that light industry has many jobs of lower actual worth than that of the common laborer.

The conventional plans have been built around light industry, and it is questionable how well they reflect the needs of any field where the requirements in any factor exceed those of light industry. The plan derived mathematically has a factual foundation, and results obtained by its use cannot be challenged on the same basis as those obtained from an empirical plan. Such a plan appeals to those people who want to know "why." It must be assumed that the general pattern of the wage structures on which it is based is sound, being the results of many years of "shaking down."

A plan designed around the wage structure with which it is to be used will correct only the real inequities in that wage structure. On the other hand, a plan that does not fit the wage structure will indicate inequities that do not in reality exist and actually create additional inequities.

2. The advantages in the direction of simplicity are:

a. The mathematical solution will point out duplicating and overlapping factors and allow their consolidation into the fewest practical number. Those factors which have no actual weight may be dropped entirely.

b. By solving for factor weights in terms of labor grades, evaluation points are not used and no wage curve is needed to translate points into money. A scale of rates for the labor grades serves this purpose.

c. By the use of degree definitions in terms of job elements and well-selected, bench-mark jobs, the plan can be interpreted and applied with the maximum of consistency.

In conclusion, it is safe to say that any industry having unique conditions of skill, responsibilities, effort, or working conditions may do well to consider the foundation of its evaluation plans with especial care.

TO attain positive industrial peace, we need something more than by-laws and compulsory rules. We need productive teamwork. We need men working willingly together toward known goals. We need, in short: workers who are informed; workers who enjoy a sense of security; workers who are given a feeling of individual dignity; workers who are properly and fairly paid; workers who are given non-financial incentives.

You will notice that this list lays little stress on wages as such. This might once have aroused the protests of the old-school, hard-headed employer whose philosophy was "treat 'em rough and tell 'em nothing" . . . who said with finality, "loyalty goes with the pay envelope." But I think you will grant with me today that it may be possible to be hard-headed *without* being practical. I don't think it is practical to assume that wages are all-important. I just don't happen to think it is true.

Look back over the history of labor relations. The industries that have been wracked, stymied, and disrupted by strikes most often—the industries most plagued by low morale, slow-downs, and feather-bedding — are among those in which the highest wages are paid! In those industries, I believe, both management and labor have been barking up the wrong tree for decades. Unfortunately, they do not seem much closer to true harmony today than they ever were. And I think we must all agree that you cannot expect a high degree of efficiency from an industry beset by quarrels.

On the other hand, I happen to know of a company that established two almost identical operations during the war. Both plants were making the same item with the same equipment under virtually the same set-up. The only important difference between the two operations was this: One was located in an area where the whole psychology is one of militancy and agitation over rights and prerogatives. The other was located in a small city off the beaten path where the employees were newly recruited to industry with no background of chronic conflict and mutual antagonism. The measured man-hour productivity in the second of those two plants exceeded that of the first by twenty-five percent!

This and many similar examples indicate that *employee attitudes* are a vital factor in positive industrial peace. Can we go one step further and conclude that employee attitudes, over the long run are conditioned by *management attitudes* toward employees? I believe we can. For it has always seemed to me that:

You can buy a man's time.

You can buy a man's physical presence in a given place.

You can even buy a measured number of skilled muscular motions per hour or day.

But you cannot buy enthusiasm . . . you cannot buy initiative . . . you cannot buy loyalty . . . you cannot buy the devotion of hearts, minds, and souls.

You have to *earn* those things!

From a talk on "The Causes of Industrial Peace" given at the 52nd Annual Congress of American Industry in New York on December 4, 1947, by Clarence Francis, Chairman of the Board, General Foods Corporation. Copyright, January 1948, by Mill and Factory; *reprinted by permission of the editors.*

A confidential, impartial attitude appraisal lets employees tell what they really think, reveals specific trouble spots in administration, supervision and policy, encourages employees to be more cooperative as a result of the interest management is showing in them, stimulates top executives to pay closer attention to employee relationships, and helps bring management and supervision closer together.

Appraising Employee Attitudes

By JAMES W. REDFIELD

AN EMPLOYEE attitude appraisal is, essentially, an adaptation to the problem of management-employee relations of already familiar objective techniques used in business generally. The appraisal technique employs time-tested principles to obtain facts, pertinent to this important relationship, on which management can build a better, or maintain an already favorable, personnel situation.

Management makes use of objective techniques in order to assure: (1) that all of the facts pertinent to the matter will be obtained; (2) that the obtained data, coming in each case from an original source, will be reliable; and (3) that the findings will accurately reflect the actual situation because the methods used are as free of bias as possible.

Objective Technique Applied to Employee Relations Problems

Management is beginning to acknowledge its need for obtaining unbiased and dependable data on employee reactions to the job situation which will serve as a guide toward understanding its employees and toward maintaining or building effective and workable personnel policies, programs, and activities.

Management's need for reliable facts on success or failure in employee relations can now be adequately met through the use of a process of obtaining, on an objective and impartial basis, the reactions of employees and supervisors to their work environment. Like the widely used objective means of obtaining dependable marketing, and other facts, this process goes to the primary source for its data—in this case, to the employees themselves.

The Employee Attitude Appraisal

A number of different names are given various means of obtaining employee reactions to the job situation — "morale study," "morale survey," "attitude survey," etc. The term "employee attitude appraisal," however, seems most adequate for the method to be discussed because, properly applied, it does more than merely describe the state of mind, or morale condition, of the personnel. Having determined the employees' and supervisors' attitudes toward specific job aspects, this process provides for an evaluation, or appraisal, of these attitudes from the standpoint of their reflecting significant areas of satisfaction or dissatisfaction among the personnel. The "appraisal" aspect of this method makes

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it possible to study, individually, not only the favorable areas of attitude, which endorse the effectiveness of the personnel policies or practices to which these attitudes relate, but also unfavorable areas of employee reactions, which identify the related personnel activities as activities needing corrective attention.

Assurance of objectivity and unbiased results.

In an employee attitude appraisal, objectivity is achieved and bias minimized through the use of a "secret ballot." A specially designed questionnaire is filled out but not signed by the employee. He seals it in a plain envelope and puts it in a common container. The questionnaire is carefully constructed so as to draw out unrestricted opinions of employees and supervisors on various elements of job aspects—such as their work, supervision, compensation, the future, working conditions, employee benefits.

Preparation of the questionnaire requires skill and experience. If bias and a possible misleading interpretation of results are to be avoided, this should not be attempted by the layman. Moreover, much current opinion now holds that studies of employee attitudes should be conducted in all but a few instances by other than management representatives so that complete freedom of response may be assured and so that a possible fear of management reprisal may be avoided.

Simplicity of the appraisal procedure.

When properly conducted, an appraisal requires a minimum amount of preparatory attention by executives and supervisors, and it takes up less than an hour of the employee's time for filling out the questionnaire. Therefore, interference with normal work schedules is negligible. Briefly stated, the attitude appraisal procedure consists of:

A discussion with an executive committee during which a specially developed questionnaire is adapted to the specific conditions existing among the personnel to be appraised, and a brief meeting with key supervisors at which appraisal purposes and procedures are explained. The supervisors aid in developing a time schedule for conducting the appraisal among the personnel.

Assembling employees and supervisors in predetermined groups during working hours. At these sessions the appraisal purposes are briefly explained. The personnel fill out the questionnaire at this time and immediately return to their work.

Processing the questionnaires, tabulating, and interpreting the results, and finally destroying the completed questionnaires. Tabulated results, interpretations, and recommendations for corrective actions are reported to management, which normally passes on salient findings to the personnel. Often management also states, at this time, its intention as to the correction of whatever current personnel policies or practices are criticized by the employees.

Employee Attitude Appraisal Benefits

An employee attitude appraisal is the source of at least seven major and of many lesser benefits for management. Management gains in two different ways. First, the appraisal provides specific tools which management can use directly to correct trouble spots in its relations with employees, or it obtains factual proof of the effectiveness and employee acceptance of present policies and practices. Second, an appraisal benefits management in that it stimulates the thinking and activities of company executives and supervisors with respect to management employee relations.

The seven principal benefits are:

1. The personnel are given an unrestricted opportunity to express themselves on aspects of the job and company without fear or embarrassment.
2. Reliable data are obtained on what the personnel *really* think about specific elements of the work situation. These data become a guide for management toward maintaining, or achieving, more favorable employee relationships.
3. Weak spots in the personnel or administrative program are revealed. Inept policies and ineffective procedures which are sources of irritation for the employees are identified. Supervisory practices which, even though unknown to the supervisors, may irk employees and cause dissatisfaction and dissension are brought to light.

   Correction of these irritants can be made on a pin-point basis; sweeping changes of policies, procedures, or supervisory activities, and the confusion and misunderstanding that often accompany such major changes are avoided.
4. Management puts itself definitely on record with its personnel that it is seriously interested in furthering satisfactory employee relations.
5. As a result of this management interest the personnel tend to become more cooperative and, therefore, more productive. Feeling that individual attention is being paid them by management, they

feel they are more of an integral part of the organization.

6. Top executives are induced to become more interested in employer-employee relationships within the organization through sponsorship of the appraisal and curiosity as to the results.

7. Management and supervisors are brought closer together through the agency of the appraisal program which has as its avowed aims: achieving better understanding of the employees themselves and of the supervisors' administrative problems; and clarifying and implementing management thinking with respect to its employee relations.

The opportunity to unburden gives employees a lift.

Providing the workers with an opportunity to unburden themselves about the job, supervisors and working conditions has, in itself, a salutary effect on employees' attitudes. They feel that management is taking them into its confidence in an effort to create or to maintain a favorable work situation, and they appreciate it. Often there is no outlet in an organization for employees' gripes and criticisms, but in an appraisal they can let off this pent-up steam. No one will know *who* said whatever goes into the questionnaires; therefore, there can be no individual reprisal. Yet—and this is important—experience with many appraisals shows that in spite of this freedom, the replies and volunteered remarks, with few exceptions, are sincere and constructive and are obviously made in a serious vein.

Appraisal results guide management actions.

In an attitude appraisal, employee and supervisory reactions are obtained toward the principal, basic elements which comprise the work situation. Reactions toward compensation aspects, for example, may be isolated from reactions toward other aspects, such as those relating to supervision, future prospects and physical working conditions. Consequently, each element can be scrutinized separately and those found to be sources of dissatisfaction can be directly acted upon. In addition, measures are obtained as to how favorably or unfavorably the personnel regard employee benefits made available to them by the company and of the extent to which details of these benefits are understood or misunderstood, liked or disliked by the employees.

Management is provided with definite knowledge of specific areas where it has succeeded or failed in its relationships with its employees, and, therefore, can act directly on specific aspects that need attention.

Management takes a stand.

By conducting an appraisal, management in effect declares to the personnel that it is sincerely interested in creating a work situation which is satisfactory to employer and employees alike; and by following through with remedial activities, management proves that this interest is real.

Making an appraisal and following through on the results shows the personnel that management, although hopeful of praise, nevertheless is willing to face without reservation whatever criticism the employees may make and, where criticized, to take all reasonable steps to eliminate sources of employee dissatisfaction. Management's stand on this project is open-handed and straightforward—and the employees react in kind.

Top management interest is stimulated.

Executive interest in employer-employee relations within the organization is stimulated by the launching of an attitude appraisal project. This top-level interest usually is sustained through the stage when the appraisal results are presented to management and continues as plans are formulated and carried out for the conversion of appraisal results into corrective activities.

There are two principal reasons for executive interest. In the first place, for an attitude appraisal to be successful and for the end results to produce improvements in employee relationships, it is necessary for top management to make the initial decision to face the facts, whether they reflect praise or indictment, and, within reason, to do something definite and concrete about sources of employee dissatisfaction that may be revealed. Having made these decisions and, thus, having wholeheartedly sponsored the appraisal, it follows that top executives will watch its progress with interest. In the second place, management and the company will be held up to the bright light of employee opinion during the appraisal and, for this reason as well, the results will be eagerly anticipated.

The appraisal, therefore, becomes the focal point for executive interest in the personnel function and is a potent medium for encouraging top management support of personnel activities within the organization.

Management and supervisors are brought closer together.

In the planning stages of an attitude appraisal, management takes key supervisors into its confidence and explains to them the appraisal purposes and procedures. Management specifically states to these supervisors that its reason for conducting the appraisal is to pro-

vide them with additional tools for successfully and effectively administering their duties. Considerable care is taken to allay any apprehension of supervisors that the appraisal results will be used to anyone's personal disadvantage. These supervisors also assist in setting schedules for conducting the appraisal and, as a result, the project is launched as a combined management-supervisor endeavor.

Later, after the appraisal results have been presented, management and key supervisors jointly discuss the findings for their respective employee groups and, together, determine upon a course to follow that will enable each supervisor to build, or to maintain, favorable relations with the employees under his jurisdiction. The appraisal results give the supervisors definite guideposts that help them in their administration and provide bases for a better understanding of the needs, desires and reactions of their employees. Consequently, the attitude appraisal becomes a valuable means of bringing together management and the supervisors in a common purpose.

The Attitude Appraisal Applied

The simplicity with which an appraisal can be conducted is illustrated by an attitude study conducted recently among 400 clerical workers and their supervisors of a large utility company. These personnel were spread out over six floors of an office building and several outside locations. The problem was to conduct the appraisal quickly, so as to interfere as little as possible with the normal work routine, and so as to hold to a minimum any discussion of the appraisal questions between those who had and those who had not filled out questionnaires.

In spite of the dispersion of personnel, the appraisal was conducted all in one day and there was little interference with the work. On the day before the appraisal, a time schedule, carefully worked out with the help of the personnel executive, was coordinated with work schedules through the cooperation of the supervisory group. This was done in order to avoid the day's peak periods in the various departments. Strategically located larger offices were selected as gathering places and a detailed time and place schedule for each departmental group was distributed to the supervisors.

The next morning, promptly on schedule the first departmental group was assembled in one of the general offices. The appraisal director, introduced to the assembly by the ranking supervisor present, briefly described the appraisal purpose and procedure and distributed the questionnaires. The director then appointed an employee from the group as "monitor." The monitor's only duties were to see that all completed questionnaires, in sealed envelopes, were deposited in a container placed in full view, and to guard this container until it could be picked up by the appraisal director.

The assembled employees and supervisors proceeded to fill out the questionnaires on the spot. About seven to ten minutes had been consumed. In the meantime the second group to be appraised were assembling according to schedule in another location. (At different times during the day the company auditorium, its library, board room, and the larger general offices were used for separate groups.)

Having started off the first group, the director rejoined the personnel executive and moved on to this second group, where he repeated the routine of presentation, questionnaire distribution, and appointment of a monitor.

This procedure was followed according to the prearranged schedule throughout the day. The outlying groups presented no problem and required only a small amount of travel time for the appraisal director to reach these locations. Between scheduled meeting times, the containers enclosing the completed questionnaires were sealed up in full view of the employees and were collected by the survey director.

There was no confusion or excitement among the personnel, and without exception, the supervisors were pleased because the work was so little interrupted. As a result, conducting the appraisal left a favorable impression not only with the employees but also with the management. Similar planning and scheduling, in cooperation with management and the supervisors, can assure the successful conduct of an attitude appraisal regardless of whether the personnel are located all under one roof, in separate buildings, in branch stores, or in other dispersed operational units.

Employees universally welcome the opportunity to unburden themselves when they know there will be no possibility of individual identification. The seriousness with which they apply themselves to answering the questions in an appraisal and the tenor of their volunteered comments (made to the appraisal director and written in the questionnaires) are unmistakable evidence of this.

Not long ago during an appraisal of a multiple-unit retail store personnel group, some 125 employees of the general accounting office were filling out their questionnaires. As individuals completed their questionnaires, deposited the sealed envelopes, and returned

to their work, remarks made to one another could be overheard by the director. These remarks were typical. Some said, "Say, that's all right. I certainly got a lot off my chest." Others said, "I've been wanting to tell someone about the working conditions here for a long time but there's been no chance." And there were other similar remarks. The director thanked one of these employees for his cooperation in filling out the questionnaire. This employee exclaimed, "Don't thank me, you've done us a favor."

Later examination of these questionnaires revealed other reasons why this group had applied itself so assiduously to answering the questions. Two aspects of the job situation were bothering them and here was an opportunity to speak their minds. In the first place, the supervisors of this group had come to disregard the employees' personal feelings and had formed the habit of issuing orders autocratically, and in general of supervising in an impersonal manner. As these undesirable supervisory habits continued, dissension and inefficiencies among the employees had increased. Management had observed the growth of inefficiencies and had noticed an increasing need for replacements in the department but did not know the causes.

The appraisal results were as clearly indicative of the reasons as they were surprising to management. From twenty-five percent to more than half of these employees, on as many as eleven specific counts, were critical of their supervisors. For example, a large proportion of the group felt the supervisors were not interested in how individual employees fared in their jobs, others said the supervisors were inconsiderate and discourteous and showed no appreciation for good work when it was done. They said the supervisors criticized individuals without good cause and in front of other employees, and could not be depended upon to handle employees' suggestions and complaints with understanding and tact.

In the second place, these employees were piqued because recently a decision had been made arbitrarily by management to change the work hours, which originally were 8 o'clock to 5 o'clock, to a later period of 8:30 o'clock to 5:30 o'clock. Management had made this change in order to better co-ordinate central office and branch store operations. This was a legitimate reason but the change was announced to the office group abruptly and without explanation, and for that reason it was resented. Typical comments of these employees were:

> "I feel the employees should be given some explanation when changes in working hours are made. I don't like the dictatorial attitude of the company."
>
> "Why not give us some warning of a change in hours—don't we have feelings and plans that should be considered?"
>
> "It's not the change—it's the way it was done. No warning, no explanation—just here it is—do it."

This management, immediately on receiving the appraisal results, issued a bulletin which explained that the change in hours was required in order to coordinate branch and main office functions and asked for the employees' cooperation to the extent of accepting the change. In addition, supervisory meetings were immediately scheduled for the expressed purpose of instructing the supervisors in the application of good human relations principles in their day-to-day contacts with their employees. At last report, there was a new feeling of cooperation and less tension in the group, output had increased, and the whole tone of this office had improved.

Often it is found through an attitude appraisal that remedial measures to improve attitudes are required only for one or several departmental or functional groups within an organization and that the remaining groups in the company do not need such corrective treatment. Where this condition exists, as it does in a majority of organizations, appraisal findings enable management to concentrate its attention on the "sick" departments or groups. Thus, time and effort spent on corrective action are not wasted on departments not needing such treatment. Moreover, the possibility of the distressed groups adversely affecting the favorable attitudes of the remaining employees may be minimized.

In a recent appraisal, the approximately 600 employees and supervisors of a nationally known company were segregated for appraisal purposes into eighteen departmental and functional groups. This segregation was made along general supervisional lines so that, should corrective treatment be revealed as needed by any of these groups, it could be applied directly through, or with respect to, the respective supervisory personnel.

The appraisal results proved the efficacy of such a grouping of the personnel. A gauge of the over-all attitude condition of a personnel group, called the "attitude level," which had already been developed and tested in other appraisals, was individually computed for each of the eighteen personnel groups. Although the attitude levels of many of the groups were satisfactorily high,

the levels of certain of them were low. These low-level groups were most in need of remedial action; a fact that subsequent detailed analysis of appraisal results substantiated. Consequently, these groups were isolated for preferred attention by management in its ensuing program of attitude improvement.

The departmental and functional groups had the following attitude levels. (A level of 60, in a scale of 0 to 100 is selected for purposes of this illustration to represent a satisfactorily favorable attitude condition in an employee group.) Ten groups had acceptable, or better, levels ranging from about 58 to 70. Four groups had levels somewhat below 55 which, according to the measure employed, reflected an attitude condition that was not serious but which, nevertheless, warranted management attention.

The remaining four groups, however, had extremely low levels of approximately 50. Further study of the results for these four low groups, comprised of accounting, purchasing, sales office, and general stenographic employees, revealed that different factors were causing dissatisfaction in these departments. The accounting personnel, among other things, could see no possibilities for future progress either from the standpoint of salary increases or with respect to promotion. Their view of the future was dim, and there was no incentive for them to do effective work or to be cooperative with management. Although the purchasing and the sales office employees were unrelated groups, both groups were disturbed, primarily, because they thought that, although their salaries compared favorably with the salary scales in other similar companies, there were compensation inequities within the departments. They thought that salaries paid employees in similar jobs in these departments, in many cases, were unequal and, as a result, that some were being paid more than others for equal amounts of work. The stenographic group on the other hand, complained principally that the work was unequally divided, that favoritism was often the basis for assigning the more desirable jobs, that there was no appreciation shown by the supervisors for work well done, and that there was no possibility for qualified employees to progress to more exacting and responsible jobs in the department.

These specific group findings enabled this management to go directly to the source of the dissension in each of these dissatisfied groups.

Other specific findings, typical in attitude appraisals, have helped managements to locate and correct trouble spots of adverse reactions among their employees. In one department store as many as fifty percent of the operating employees were recently found to be disturbed about the poor physical conditions under which they had to work; in another, almost sixty percent indicated an inadequate understanding of the company group insurance plan; and in a service organization from thirty to thirty-five percent of the employees of two different departments expressed a desire for a suggestion system, thereby revealing ignorance of the fact that a suggestion system, although ineffective, had been in operation in the organization for several years. In another merchandising operation, although the management believed that its selling employees would not react favorably to company-sponsored training in selling activities, it agreed to having this aspect explored by means of the appraisal questionnaire. This management was agreeably surprised to find that as many as eighty-five percent of the selling personnel not only expressed a desire for additional sales training but indicated a preference for instruction in the specific fields of merchandise attributes, salesmanship, and customer relations.

Conclusion

Viewed in its entirety, an employee attitude appraisal has a favorable influence on the thinking of the employees and on their reactions toward their jobs and their company. It provides a source for management of much directly usable data on specific aspects of existing personnel policies and practices, and is the means of isolating for special attention segments of the personnel wherein reactions to these policies and practices are adverse.

In addition, an attitude appraisal, requiring top executives' consideration of the project, management's decision to face the facts and to follow through on the results, and its approval of the appraisal procedure, has the added effect of bringing executives and supervisors into closer touch with management-employee aspects of the business.

An employee attitude appraisal diagnoses objectively the relationship between management and its personnel and points the way to specific remedies wherever remedial measures are needed. It is the basis for creating a more wholesome and productive association between management, supervisors, and the employees.

Rather than the economic theory of job choices, it is the worker's rational adaptation to circumstances as he sees them which is likely to determine his attitude towards job opportunities. Important elements in his point of view include the agreeableness of the job, relative wage levels, the apparent scarcity of good jobs, the economic advantages in staying with a job, attachment to a locality, and the limited chances for advancement.

The Worker's View of Job Opportunity

By LLOYD G. REYNOLDS and JOSEPH SHISTER

THE economic theory of job choices, which has had great influence on management thinking, provides us with a good point of departure. The economic theory emphasizes freedom of choice, foresight, initiative, rationality and economic motivation. The worker is regarded as behaving like a scientist, carefully gathering all of the relevant facts, and then choosing the job which promises the greatest net advantage. This does not mean, of course, that the choice is influenced by income alone. There has been some tendency to believe, however, that income considerations are of predominant importance. This view was expressed in extreme form by the management man who said: "Well, wages aren't everything. I guess they're only about ninety-five percent."

The present study indicates that the gap between actual behavior and the economic pattern is quite wide. This does not entitle us, however, to say that the observed behavior is irrational. We should ask ourselves whether it may not be economic theory which is unreasonable. We should remember that the theory was developed by middle-class people whose home environment, education, occupational opportunities, and habits of mind differ a good deal from those of the average manual worker. The economic theory of job choices may be some indication of the way in which economists and other scientifically-trained, middle-class people actually choose jobs, though one cannot assert even this much without more evidence. In any event, there is no reason why the behavior of manual workers should fall into the same pattern. It seems more reasonable to expect that different occupational groups will exhibit special behavior tendencies which reflect differences in the cultural environment of each group.*

The worker's behavior must be understood as a response to the situation in which *the worker* believes he is placed, not to the situation as it might be conceived by an omniscient and scientifically trained observer. One must consider the objectives which the worker is actually pursuing, not the objectives which the observer might consider reasonable. One must consider what the worker knows and believes about job opportunities;

This article is adapted from the concluding chapter of a book by Professors Reynolds and Shister of the Yale University Labor and Management Center on the determinants of worker satisfaction and labor mobility in a New England factory city. The book, entitled Job Horizons: A Study of Labor Mobility, *will be published by Harper and Brothers in the Yale Labor and Management Center Series. Mr. Reynolds is Professor of Economics and Associate Director of the Center and Mr. Shister is Assistant Professor of Economics and Research Director of the Center.*

* The idea that different functional groups—workers, management officials, union officials, and so on—will take characteristically different views of the same situation and will follow different patterns of behavior is a central element in the research approach used at the Labor and Management Center. For an elaboration of this view, see E. Wight Bakke, *Adaptive Human Behavior,* Reprint No. 4, Yale Labor and Management Center, 1947.

unknown opportunities are irrelevant. One must consider that the worker's training in self-advancement is pragmatic rather than theoretical. The thesis to be developed here is that worker behavior is in general a rational adaptation to the circumstances *as the worker sees them.* Impulsive, ill-considered and erroneous action certainly exist also. We shall argue only that worker behavior is more nearly rational than it seems when viewed in the light of economic theory.

The Worker's Background

Consider the experience of a typical manual worker during the formative years of say, fifteen to twenty-five. He grows up in a family whose occupational horizon is quite limited. The job which the father knows best is his own, but few working-class parents want their children to follow their own occupation. If they think about the matter at all, they want the child to rise to something above the level of manual labor. They have little conception, however, of the great variety of jobs in the higher occupational strata, of prospective earnings from these jobs, or of the kind of preparation needed for them. Many wage-earning families have a general belief that more education will somehow propel the child into a higher stratum. This belief is not based on concrete knowledge, however, and is easily overborne by stress of financial circumstances or by the child's own desire to drop out of school.

The child himself usually has little conviction about the advantages of additional schooling. His knowledge of the world of jobs is even more shadowy than that of his parents. Even if a connection does exist between years of schooling and occupational progress, which is not at all certain as regards manual work, this is not effectively impressed on the child during his school years. School is simply something which he must pass through before beginning his adult life. When he drops out of school before finishing, he does not consider that he is sacrificing future opportunities. He thinks rather that he is bettering himself, for he now has what seems like a great deal of money in his pocket, while his friends who continue in school must depend for money on their parents or on odd jobs. In the modern American city, pressure on the youngster to spend money becomes acute at a quite early age, and probably contributes a good deal to premature school-leaving.

Careful calculation of the relative advantages of different careers and long-range planning for the child's training and induction into a particular kind of work appear to be middle-class luxuries not found to any extent in working-class families. This is no doubt due partly to the steadier incomes of middle-class families, which make the realization of long-range plans much more practicable for them than for the manual worker. An unemployed worker during the last depression, when asked why he was no longer making any plans for the future, replied, "It was no use too many times." Many workers, after the repeated breakdown of plans through unemployment and other mishaps, have concluded that long-range planning is impracticable for them. For middle-class people, on the other hand, planning carried out with a large measure of success generation after generation has gradually become part of the cultural pattern.

There is today a high probability—though this was not true thirty or forty years ago—that the child who drops out before finishing high school will spend the rest of his life in manual labor. There are now more than enough high school graduates to fill the available clerical jobs and an increasing proportion even of high school graduates are entering manual occupations. Among those who start out in manual work, there is an important distinction between those who learn a skilled trade and those who do not. This need not be done immediately on leaving school, but must be done during the first few years of work. Most workers marry and have children at an early age and after this point the pressure for immediate income is too great to permit of trade training. Unless a man has developed a trade skill by his early twenties, he is very unlikely to do so at all. By the age of twenty-five, the orbit in which he will move for the rest of his life is rather firmly established.

He will probably by this time have held a number of jobs. His first job is usually chosen in a very haphazard way and turns out to be a blind alley. He goes through a "fumbling-around period" of several years, during which he tries out two, three, or perhaps many more jobs before finding something which seems satisfactory and permanent. His views about opportunities for advancement, the characteristics of good and bad jobs, and the best methods of job-hunting, are based on this concrete experience. His knowledge consists of generalizations from a few cases, rather than logical deductions from first principles.

The worker's knowledge of the world of employment is thus fragmentary and limited, as knowledge based on practical experience must always be. It is limited to the few jobs on which he has worked and to the partially accurate information he obtains from gossip with his friends. Unless he is extraordinarily mobile, he can never become very expert in locating and appraising

various jobs. He can no more learn to become a good shopper for jobs than a housewife who bought only ten sirloin steaks during her lifetime could become an efficient meat buyer.

Out of his employment experience the worker develops a set of basic attitudes and beliefs about jobs: a definition of what constitutes a "good job," a feeling that job opportunities are scarce and valuable, a strong attachment to a particular plant and a particular community, a technique of job-hunting, and a conception of the opportunities for progress which are actually open to him. Each of these sets of attitudes deserves brief comment, since only in the light of them can one judge the rationality of the worker's behavior.

The Concept of a Good Job

As for the elements which enter into his conception of a "good job," the worker seems to be at least as much interested in leading an agreeable life on the job as he is in the income which the job yields. It is important to him that the job should not be too arduous from a physical standpoint, that it should have some intrinsic interest, that he should not be driven too hard by supervision, that he should be given fair treatment by the foreman and other people in management, and that he should have pleasant personal relations with other workers in his department.

It would be very satisfying if one could assess quantitatively the relative importance of wage and non-wage considerations—if one could say that income has a weight of thirty percent or fifty percent in the worker's conception of a satisfactory job. It is not certain, however, that such a statement would have very much meaning. Any element of a job, if it is disagreeable enough, is capable of assuming exclusive importance in the worker's mind. Each element has a potential importance of one hundred percent. The elements which will actually be mentioned as sources of satisfaction or dissatisfaction by a particular group of workers clearly depend on the job conditions under which they are working at the time.

Our data really say only that, *as jobs were set up in this area in 1947,* certain factors stood out more prominently than others in workers' minds. For reasons noted earlier, the data are more reliable as regards sources of dissatisfaction on the job than as regards reasons for satisfaction. The main conclusion to be drawn is that, under 1947 conditions, the following factors — in roughly this order of importance — were mainly responsible for discontent and voluntary labor turnover: unsatisfactory physical characteristics of the job; wages inadequate to meet customary standards of living; unfair treatment of one sort or another; lack of sufficient independence on the job, due mainly to oversupervision; and the uninteresting nature of the work done.

Wages are clearly one of the most important elements in the picture. The worker's interest in wage rates, of course, is not simply an interest in consumption. It arises partly from the fact that wage rates are an important element in fairness of treatment. From this standpoint, the important thing is not the absolute level of the wage, but its level *relative* to the wage rates of others with whom the worker thinks he should be compared. Depending on the circumstances, the comparison may be with other workers on the same job, in other departments of the plant, in other plants in the area, or even in plants some distance away.

The extent to which the worker is interested in the absolute level of his wage—that is, in its purchasing power—depends partly on the number of dependents he has. The young single people in our samples were usually well satisfied with their wages and frequently pointed out that they did not have many things on which to spend money. The worker's interest in money increases sharply with marriage and continues to increase with the arrival of additional children. The prominence of money income in wage-earners' thinking is probably also influenced considerably by the behavior of retail prices in the recent past. The reader should recall that our interviews were conducted in 1947, a year in which the retail price level was rising rather rapidly. Wages might have received even less emphasis if the study had been carried out in a period of stable prices.

Good Jobs Are Scarce

A second conclusion which workers draw from their experience is that good jobs are scarce and hard to find. It seems curious that this view should have been widespread even in a year of peak employment such as 1947. Throughout 1947 there were never less than one thousand unfilled jobs listed at the local office of the State Employment Service and there must have been many more which were not listed. It must be remembered, however, that workers have no way of knowing this. They know only about vacancies which occur in the immediate vicinity of their own job or which are mentioned to them by friends and acquaintances. Moreover, many of the vacancies which they hear about do not meet their standards of a good job. Good vacancies are likely to be filled very quickly by people who hear about them "on the grapevine," and jobs which remain un-

filled are usually undesirable for one reason or another. Again, many vacancies which a man hears about are not vacancies *for him,* because he lacks the training, experience, and other qualifications for the job. A high demand for "Grade A" machinists is of no importance to a low-skilled machine operative.

The experience of workers with unemployment and futile job-hunting during the 1930's certainly strengthened their conviction that job opportunities are limited. This experience is still vivid in their minds and many years of high employment would be required to erase it.

Job-Hunting Technique

Third, the worker develops through experience a technique of job-hunting. This technique is essentially political rather than economic, since it involves heavy reliance on friends both to provide "tips" on vacancies and to use their influence in getting one into a particular job. If one were trying to predict the plant in which an unemployed man will seek work, it would be more important to know where his friends and relatives are working than to know the wage-levels of different plants in the area. Where the worker does not hear of a job through friends within a reasonable time, he most frequently resorts to direct application at a plant which is conspicuous because of size, closeness to his home, or some other reason. In most cases, however, he knows very little about conditions in the plant before applying for work.

These methods of job-hunting are reasonable enough when one considers that employers in the area rely a good deal on personal recommendations by present employees and that it is difficult for workers to learn about good vacancies in any other way. One can understand also why most workers take the first "good" job offered them. Perhaps there are still better jobs somewhere else in the area; but the worker is not sure of this and he does not know how he could find out. Convinced that good jobs are scarce anyway, he thinks it sensible to take the first one which presents itself. The worker's behavior is based on his interpretation of the situation existing on the demand side of the market. The structure of demand, and the way in which demand presents itself to the worker, would have to be quite different in order for a technique of systematic job-shopping to be workable.

Resistance to Change

Fourth, the worker who has located a "good" job quickly develops a marked attachment to it and a strong aversion to change. In the worker's mind, a change of jobs does not connote advancement and wider opportunities, as it is apt to do for middle-class people. It connotes rather lay-offs, unemployment, and personal disaster. This attachment to one's present job appears to increase rapidly with length of service or with increasing age. Most workers who have more than five years' seniority or who are more than forty years old are very unresponsive to alternative opportunities.

In view of this general immobility of manual workers, how does one explain the fact that during 1947 manufacturing industries in the area studied had an average voluntary quit rate of about three and one-half percent per month? It should be noted first that this does not mean that forty percent of the manufacturing workers changed jobs during the year. Many of the job-changers shifted jobs more than once during the year, so that there is duplication in the total turnover figure. The proportion of workers who changed jobs voluntarily during the year cannot be obtained from existing statistics but was probably not more than twenty percent.

Who were these people? Some of them were youngsters recently out of school who were still feeling around for a satisfactory type of work. Some were laid-off workers or returning servicemen who had tried out a new job, found it unsatisfactory, and gone on to try out something else. Some were temperamentally unstable people who find it difficult to remain long in any job. Some were ambitious and planful people who left satisfactory jobs in the hope of finding something still more satisfactory or with greater opportunity for future advancement. This planful group, however, was a small percentage of all job-changers. It should be noted that, of the workers in our samples who had changed jobs voluntarily since V-J day, only about fifteen percent had left a satisfactory job in order to take a better job.

Economic theory usually assumes that workers stand ready at any time to leave their present jobs for better ones and that all voluntary movement of labor is of this purposeful character. In actuality, however, a large majority of the workers at any time are extremely unwilling to leave their job unless forced to do so through lay-off or discharge. Of those who do change jobs of their own accord, the great majority do so because of some unsatisfactory feature of their present job. They are "pushed" into the labor market through discontent rather than "pulled" by any concrete knowledge of better opportunities. Workers who move deliberately from one job to a better job *which they know about in advance* are a minority of a minority—probably not more than five percent of the labor force even in good years. It is doubtful whether this is a large enough

group to affect the structure of wages and employment in the way assumed by economic theory.

Where immobility of labor has been recognized by economists, it has frequently been ascribed to ignorance or irrationality. This is not a correct view of the situation. The worker usually has good reasons, both economic and non-economic, for wanting to continue in his present job. On the economic side, the worker with years of service in one plant has more protection against lay-offs than he would have if he started in at a new plant with no seniority. This is a very important consideration with many workers. Most of them seem to regard the present high employment as abnormal and temporary, to be followed in all likelihood by a period of depression. Many of the workers interviewed said that one of their main concerns was to "get set before the bust comes." One way to prepare for "the bust" is to pile up as many years of seniority as possible on your present job. A change of jobs means not only loss of seniority but also loss of other rights which accrue with length of service: longer vacations with pay, participation in pension plans, and so on. Moreover, since most companies in the area fill their more desirable jobs by promotion from within and hire from the outside only for the lowest classifications, a change of employers usually means dropping back to a lower occupational level and starting in to climb the ladder all over again.

A change of jobs means also a major change in one's way of life. Going every day down the same street to the same job is attractive to most people. Change involves the unpleasantness of establishing a new work routine and also the risk that it may prove less satisfying than the old. Change also brings a break with friends in the old plant and the problem of establishing social relations in the new work group. If the new job is in another city the break with the past is even sharper and more difficult. The great majority of the workers interviewed in our study showed extreme resistance to the idea of moving to another area, even at considerably higher wage rates. While these attachments to a particular locality, workplace and group of friends are primarily non-economic, they have an economic aspect as well. Well-established friendships can be useful in seeking work at a time when work is scarce. Long residence in one area helps in seeking work and, if worst comes to worst, it also qualifies one for receipt of public assistance.

Limited Objectives

Fifth, the worker learns to set bounds to his occupational ambitions. If in his early years he has any illusions about a rapid rise to independence and wealth, these hopes soon wither before the realities of industrial employment. He learns to limit his aspirations to modest and attainable objectives: a change from the second shift to the first shift, from hourly-rated work to incentive work, from a job in labor grade "9" to a job in labor grade "8," or even to another job in the same labor grade which is more desirable for one reason or another. Beyond this most workers have little expectation of going. The number of foremanships is limited and most workers would not want to be foremen even if they could. The chance of climbing into the higher supervisory and executive levels is even smaller.

We do not mean to imply that frustrated ambition constitutes a major problem for all, or even most, manual workers. It should be noted, first, that some of those who begin as manual workers are able during their lifetime to rise to foremanships and other supervisory positions, or even succeed in establishing their own businesses. Since our samples were limited to people who are still manual workers, we have no way of estimating how many have risen in this way or what their characteristics are. The proportion is almost certainly smaller today than it was some decades ago, partly because of the increasing importance of higher education as a prerequisite for admission to professional and managerial occupations. Second, among those who have continued in manual work, a considerable number —more than a third in each of our samples—seem perfectly satisfied with their present jobs and have no desire for advancement. This may mean any one of a number of things. The worker may have reached the top of his craft, or he may have reached an age at which security dominates all other considerations, or he may never have had any strong occupational ambitions, or he may have modified his early ambitions in the light of practical possibilities. The fact that a considerable proportion of workers have no desire to rise beyond their present jobs is undoubtedly a fortunate thing; for if everyone wanted to rise when only a small percentage can actually do so, there would be much more industrial discontent than there actually is.

Limited Chances for Promotion

There remains, however, a considerable number of workers who do desire advancement and are unable to obtain it because of the limited promotional possibilities in many industrial plants. This group includes perhaps a third of the labor force. The ambition and initiative of these workers is forced to find some other outlet. One possible outlet is more money for doing the same

job. The importance of this is suggested by the fact that many workers seem to confuse it with promotion. When the workers in our samples were asked whether they had had any "promotions" since coming with their present employer, many of them gave instead the number of wage increases. For these workers, occupational advancement seemed to have no definite meaning other than higher pay. Another outlet for suppressed ambition is the desire to escape from the plant into some more independent and interesting type of work. In most cases this seems to serve merely as a psychological compensation; the worker is not actually taking any steps toward the professed goal and would probably not even know where to begin. Union activities provide still another outlet for initiative and energy which cannot find expression in other ways.

Departures From Typical Behavior

This attempt to explain worker behavior as a response to the job environment as the worker conceives it has necessarily been highly simplified. It is a description of the *average* behavior pattern of the workers in our samples. It should be re-emphasized, therefore, that "manual labor" is a very broad term covering thousands of different occupations and that the characteristics of these occupations leave their mark on the people engaged in them. The attitudes of men who have worked for years at a skilled trade, for example, differ in many important respects from those of the semi-skilled factory worker. Within the factory group, the clothing worker differs somewhat from the metal-worker, and so on.

Wide differences were noted also in the behavior of individual workers even within the same occupational group. Some had changed jobs many times since starting to work while others had worked continuously for one employer. Some appeared very interested in occupational advancement, confident of their ability to progress, curious about alternative job opportunities and so on. At the other extreme, some were entirely content to drift along in their present positions and were apathetic or even antagonistic toward any suggestion of change.

These differences in behavior are due partly to such factors as the sex and age of the worker, his education and family background, the size of his family, and the occupation and industry to which he is attached. They are also partly due, however, to psychological characteristics of the worker — intelligence, aptitudes, temperament and so on. To appraise the influence of these latter factors would be a difficult and costly undertaking and we have made no effort to do so in this study. Exploration of the ways in which psychological characteristics of the individual influence his labor market behavior offers a very promising field for future investigation.

In addition to these differences in the behavior of different workers at a given time, the *average* pattern of worker behavior is doubtless subject to considerable change over the course of time. One would expect, for example, that a prolonged depression would influence behavior in certain directions while a long period of high employment would have opposite effects. Changes in employers' methods of hiring and promotion, changes in the degree of unionization of industry and other changes in labor market structure must certainly leave their mark on workers' reactions.

The pattern of worker behavior may also vary considerably among cities of various sizes, among cities dominated by different types of industry and among different regions of the country. The results of this study in a medium-sized New England city can be regarded as conclusive only when they have been checked against the results of similar studies in many other places. From such other studies as are now available, however, it seems likely that the pattern found in other areas will be broadly similar to that described here.

If the results of the present study are even approximately correct, they have important implications for social science, industrial management and public policy. Economic theories of the labor market clearly need to be reconsidered in the light of actual worker behavior. One can make a very good case that the term "labor market" should be abandoned as more misleading than helpful. For the most part, workers do not seem to behave like sellers in a commodity market. They behave like members of an organization, with which they hope and expect to remain indefinitely. When they are dislodged from one job and must seek another, their path of movement is influenced more largely by personal relationships than by wage differentials. The wage level of a plant must certainly have some influence, particularly over long periods of time, on the plant's ability to attract and retain labor. Such sophisticated concepts as a "labor supply curve," however, at once exalt wages to a position of undue prominence and imply greater precision in workers' choices than actually exists.

Elements Needed for Comprehensive Study

A complete understanding of labor mobility would doubtless require a combination of the techniques of

economics, sociology and psychology. Workers are somewhat influenced by monetary incentives, and employers are influenced by the desire to obtain the greatest return for each dollar spent on wages. The function of economic theory is to explain this aspect of worker and employer behavior, bearing in mind always that it is only a part of behavior and not the whole. Sociological theory has the task of exploring the non-pecuniary as well as the pecuniary objectives of workers and management, and of analyzing the way in which pursuit of these objectives is conditioned by personal relationships, cultural attitudes and institutional structures. The way in which behavior is influenced by physical and emotional characteristics of the individual requires psychological analysis, though there is still far from complete agreement among psychologists as to the relative merit of various methods. Such a comprehensive explanation of labor mobility is clearly beyond the bounds of this book. We have limited ourselves to the less ambitious task of outlining the facts which need to be explained and suggesting the main points at which a purely economic explanation is adequate.

From the standpoint of industrial management, the most significant finding of the study is the importance of non-wage factors both in labor recruitment and in keeping workers on the job after they are hired. The importance of non-economic motivation has of course been stressed by most recent writers on industrial relations but it seems almost impossible to emphasize it too strongly. The quality of first-line supervision stands out as a particularly strategic factor influencing worker satisfaction on the job. To the rank-and-file worker the foreman is "the boss," the only tangible embodiment of that vague creature "the company." If relations with the foreman are unsatisfactory, no amount of speech-making or promulgation of policies by top management will convince the worker that the plant is a good place in which to work. Again, it is important to the worker that the treatment which he receives from the company, as compared with the treatment received by his fellow workers, should measure up to his conception of fairness. If he is passed over for a promotion which he thinks he deserves, if he is given unusually bad work assignments, if he is disciplined without just cause, he will not be impressed by general statements about the company's concern for his welfare. Careful internal management in these and other respects probably has more effect on a company's ability to hold labor than does its wage level.

Two other conclusions of especial significance for management stand out from the study. First, it is clear that worker dissatisfaction cannot be entirely eliminated from industry even by the most diligent managerial effort. Some of the things which workers consider most important, notably the physical nature of the job and its interesting or uninteresting character, are largely beyond the control of management. There are many bad jobs which cannot be turned into good jobs; at most, worker dissatisfaction can be alleviated somewhat by higher wages and other inducements. Management can also do relatively little about discontent with wages which results from an unusually large number of dependents, or about dissatisfaction due to neurotic characteristics of the individual.

Second, the "fringe" wage payments and company welfare programs which are often advocated as a means of attracting and retaining labor seem to have less effect than one might think. Not a single worker in our samples mentioned absence of these things as a reason for leaving his last job or for dissatisfaction with his present job. Of workers satisfied with their present jobs, only five percent mentioned these things as contributing to their satisfaction. Pensions, group insurance, plans for hospitalization and medical care, paid vacations and holidays, recreational programs, good rest rooms and cafeterias — all these may be excellent things to have for other reasons. Their influence on labor mobility, however, seems to have been considerably exaggerated.

From the standpoint of public policy, it is clear that the school system, the public employment offices, and other community institutions are not having as much success as one might wish in adjusting individual capacities to employment opportunities. While the state employment services are being used more extensively by workers and employers than they were a decade ago, they are still not used enough to make possible a very effective matching of labor demands and labor supplies. The public schools fail in many cases to establish in the minds of young people any relation between their school activities and their subsequent occupational career, or to present youngsters with an adequate picture of the array of employment opportunities open to them, or to provide any mechanism for assisting them to make the transition from school to job. These are perhaps not proper functions of the school system; but somewhere in the community these functions need to be performed.

A more disturbing prospect is that, even with ideal placement facilities, there will be a good deal of initiative and ambition which cannot be used in modern industry. A higher general level of education is producing a rising demand for interesting and responsible jobs, while at

the same time technological progress is probably reducing the number of such jobs available. Increasing frustration of large numbers of people in their daily work may have grave political and social consequences. There does not seem at the moment any easy avenue of escape from this situation. It is nonetheless important to recognize its existence and the need for constructive effort toward its alleviation.

Chapter Meetings *December 16 — January 13*

Date and Place	Chapter	Subject and Speaker
Dec. 16	Washington	Skits on Government administrative processes
Dec. 16	Western Massachusetts	"The Implications of Tying Wages to the Cost-of-Living Index": Wright H. Manvel, Manager, Wage Rate Division, Appliance and Merchandise Department, General Electric Co.
Dec. 21 Chicago Bar Association	Chicago	"It Can Happen Here": Kenneth W. Haagensen, Director of Public Relations, Allis-Chalmers Mfg. Co.
Jan. 4	Hudson Valley	"Policy Formation": (Speaker to be announced)
Jan. 5	Philadelphia	"The Place of Elemental Movement Times in Setting Labor Standards": Wright H. Manvel
Jan. 6, 6:30 p.m. Hotel Sheraton	Boston	"Management's Responsibilities in Personnel Selection": (Speaker to be announced)
Jan. 6 Bellefonte, Pa.	Central Pennsylvania	"Adjustments of Personality Conflicts in Industry": Dr. Kinsley R. Smith, Professor of Psychology, Pennsylvania State College
Jan. 7, 6:45 p.m. Molton Hotel, Birmingham	Alabama	"Personnel Management in Government": Charles W. Terry, State Personnel Director; John F. Steiner, Personnel Director, Veterans Administration; Ray Mullins, Personnel Director, Jefferson County
Jan. 11	Atlanta	"Job Evaluation": Paul M. Edwards, Edwards & Barnes, Management Engineers
Jan. 11, 6:30 p.m. Engineers Club	Dayton	"Organizing for Sales": Don O. Wood, Vice President and General Manager, The Fyr-Fyter Company
Jan. 11	St. Louis	"The Industrial Engineer and the Bank": John B. Payne, Mercantile-Commerce Bank (Discussion Leader)
Jan. 12, 6:00 p.m. Stoneleigh Hotel	Dallas	"Petroleum Research Looks Ahead": Hugh W. Field, General Manager, Research and Development, Atlantic Refining Co.
Jan. 13, 6:30 p.m.	Hartford	"Is Education Properly Training Young America for the World of Work?" (Student Night): Carl A. Gray, President, Grenby Mfg. Co.; Alan C. Curtiss, Vice President, Scovill Mfg. Co.; Lawrence J. Ackerman, Dean, University of Connecticut; Dr. Herbert D. Welte, President, Connecticut Teachers College
Jan. 13	Houston	"Financing Today's Business": M. H. Seydler, Vice President, Second National Bank
Jan. 13, 6:30 p.m. South Meriden House, Meriden, Conn.	New Haven	"Modern Quality Control": Simon Collier, Director, Quality Control, Johns-Manville Corp.
Jan. 13, 6:30 p.m. Hotel Essex House	Northern New Jersey	(Subject to be announced): William J. Brennan, Jr., (Labor Attorney), Partner, Pitney, Harden, Ward & Brennan
Jan. 13	Western Massachusetts	"Increasing Production Through Training as a Method of Combatting Inflation": Harold Engstrom, Supervising Engineer, American Home Products Corp.

Book Reviews

Insights Into Labor Issues, edited by RICHARD A. LESTER and JOSEPH SHISTER. Macmillan, New York, 1948. 368 pages. $4.00.

THIS is not a book for the beginner in the field of labor. Many of the essays which comprise it are based on the assumption that the reader already has a good grasp of economic theory and considerable knowledge of the labor movement. The mature student or practitioner of labor relations, however, will find it a stimulating volume. It represents the opening up of new frontiers by a group of vigorous young labor economists, all of whom have had opportunities to test their academic theories in practice, especially by service with the National War Labor Board. Most of the authors are presently employed as university professors; the penetrating essays which they have written for this volume represent the most important kind of contribution which university research can make to a better understanding of the labor issue.

The book is composed of thirteen separate essays with no attempt at coordination. The variety of approaches and conclusions which is made possible by the freedom given to the individual authors more than compensates, however, for the lack of continuity. The editors have made an excellent choice of articles in each of the three major fields into which the book is divided—"Labor Relations," "Wages and the Labor Market," "Labor and Full Employment." This reader was especially impressed by the wage section. Lester's own essay contains many challenging new ideas which should startle neo-classical theorists. His suggestion of the possibility of a "range theory" of wages deserves further development. Although it may be said of this essay, as of most of the others, that it raises more questions than it answers, it does point the way in which future research in this field may be very productive.

Space does not permit an appraisal of each essay, but the following list of some of the important questions which the authors attempt to answer will serve to indicate that the volume gets at the heart of the labor issues: Are there distinct patterns of collective bargaining which could be predicted if we knew sufficiently the background and environment of each labor and management group? What are the results of multi-employer bargaining? What purposes can be served by drawing a sharp distinction between grievance proceeding and collective bargaining? Are there signs of the times which point to more union-management cooperation? Is collective bargaining becoming professionalized? Will the professions organize and what will be the effect on research and technological advancement if they do? What factors explain the distinctive pattern of development of the labor movement in this country? What are the implications of narrowing wage differentials on the price structure, the distribution of the labor force, and the elimination of marginal firms? Does unionism vitiate the marginal theory? Does the supply curve of labor assume a different shape when we look up from that which we see when we look down it? How far removed is the actual behavior of the labor market from the models employed as the basis for economic theory? Does stable full employment necessitate political action by unions and considerable public ownership? Is it possible that economic change has no appreciable effect on the size of the labor force?

By bringing together in one volume the attempts of some of the most capable young labor economists to answer these vital questions, Lester and Shister have performed a fine service for the teacher, the student, and the practitioner of labor economics.

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Forecasting for Profit, by WILSON WRIGHT. Wiley, New York, 1947. 173 pages. $2.75.

THE audience to which this volume is addressed—business executives, professional economists employed by private enterprise, and students preparing for such careers—will find it an excellent "what" book. "What" is rather thoroughly analyzed and presented in two respects: (1) what kinds of help a professional economist can give to a business executive, and (2) what factors are significant in the problems confronting the economist. Neither is presented merely as a list. Both elaborate the significance and discuss the nature of each item included. Many readers will find much of value in these annotated catalogs of problems and factors which constitute the world of industry-serving economists.

Forecasting for Profit, however, seems intended as a "how" book. I doubt if many readers will be able to

follow its directions. A few of its directions are clear; most are difficult, hazy or inadequate; a few (e.g., forecasting competitors' moves) are, understandably, wholly missing. The author's apparent intention and feeling of success in this respect are both baffling and irritating. To the unsophisticated, it will cause the book to prove disappointing.

The first two chapters discuss the conditions and problems confronting business executives in the area of special competence of the professional economist. The usefulness and limitations of forecasts as a means of evaluating conditions and attacking problems are clearly presented. Chapter III surveys the factors entering into the forecast and Chapter XV reassembles the factors into a forecast. Chapters IV, V, VI, VIII, IX and XIV are primarily concerned with analyzing the factors: economic situation, national output, money, competition, business cycles and product classification. Chapters VII, X and XI deal with vehicles of forecasting and make some start on the "how" problem. They include organization of statistical data, economic models, and mechanical forecasting devices. The remaining chapters are concerned with such forecasting goals as price forecasting, turning points in sales and profits, and assembling the sales forecast.

If you read the book hoping for a broad concept of planning and forecasting, for an analysis of factors and conditions which will exhaustively detail the problem, for useful hints on how to begin, in which direction to grope, you will find the book satisfying. If you expect to find a set of directions easily followed and resulting in complete and accurate forecasts, you will find the book disappointing. The book is no substitute for a professional economist. Rather, it is a strong sales argument for employing one.

BILLY E. GOETZ

Professor of Business Administration
Antioch College

Corporate Concentration and Public Policy, by HARRY L. PURDY, MARTIN L. LINDAHL and WILLIAM A. CARTER. Prentice-Hall, New York, 1942 (Fifth Printing, 1947). 650 pages. $6.00.

IN reviewing a book entitled *The American Individual Enterprise System* in the March 1948 issue of ADVANCED MANAGEMENT, I stated that, while it was an excellent presentation of the positive achievements of our economic system, its authors, who were staunch believers in free competition and emphatic in their condemnation of monopoly, failed "to appraise the extent of monopolistic market control and the distortion it causes in the automatic determination of prices . . . through the free play of supply and demand."

The present book is devoted to that aspect of our economic system. It describes the gradual suppression of free competition during the past half-century through the growth of monopolistic price control exercised in some industries by giant corporations which dominate them and in others by trade associations. The 200 largest non-financial corporations had assets in 1931 exceeding $101,000,000,000—more than fifty-seven percent of the assets of all the thousands of corporations which run our industries, mines, transportation, communications, and wholesale and retail trade. Of these 200 corporations which are listed by name, ninety-six manufacturing companies dominate most of the important lines of manufacture—about one-third of the chemical industry, one-half or more of petroleum refining, autos, steel, non-ferrous metal industries and important branches of the machine industries, such as General Electric, Allis-Chalmers, International Harvester etc.

These concerns dominate the price policies of their respective industries, since the smaller companies find it to their own best interests to follow the lead of their big brothers in quoting prices.

The Sherman Anti-Trust Act of 1890 outlawed "every contract, combination in the form of trusts or otherwise, or conspiracy in restraint of trade." The Supreme Court, as stated in its decision in the Socony-Vacuum case in 1940, "for over forty years has consistently and without deviation adhered to the principle that price-fixing agreements are unlawful *per se* under the Sherman Act and that no showing of so-called competitive abuses or evils which those agreements are designed to eliminate or alleviate may be interposed as a defense."

However, as the authors point out, manufacturers soon learned how to steer clear of express agreements to control prices. The Gary dinners in the steel industry were a famous example which set the fashion for other industries and the Supreme Court, which so sternly frowns on "conspiracies" to control prices, held in the International Harvester case in 1927 that "the fact that competitors may see proper in the exercise of their own judgment to follow the prices of another manufacturer, does not establish any suppression of competition or show any sinister domination." All of which leads the authors to the conclusion that competitively determined prices have ceased to function in a considerable section of American industry.

The exemption from the operation of the Sherman

Act thus conferred by the Supreme Court on corporations able by their size to dominate the market has served as an additional impetus to further mergers.

In an effort to stop the growth of consolidation, Congress passed the Clayton Act in 1914 which made it illegal for one corporation to acquire the stock of another corporation where the effect may be to lessen competition substantially between the corporations involved, or tend to create a monopoly.

However, as the authors point out, the Act said nothing about one corporation buying outright the assets of another corporation and consolidations thereafter have taken that form. Between 1921 and 1948, say the authors, 4,800 concerns in the manufacturing and mining fields alone were absorbed in this manner, which resulted in the formation of new industrial giants.

Elimination of competition is not confined to industries dominated by giants. The authors point out that in numerous industries, composed largely of medium-size and small concerns, trade associations have been instrumental in eliminating competition by the innocent device of furnishing to their members statistical information covering prices among other data. Court decisions, while adverse to agreements to maintain prices, have raised no objection to this statistical service so long as no intent to control prices can be proved.

Several chapters are devoted to the subject of concentration of control of large corporations with many thousands of stockholders in the hands of a small group. The effect of our tariff and patent laws in eliminating competition also receives attention.

Altogether this comprehensive study of corporate concentration leaves the reader with the depressing realization of the profound change which our economy is undergoing from a system of free competitive enterprise to a controlled economy in which the competitive area is being steadily narrowed and in which control is exercised by a few at the expense of the many.

N. I. STONE

Consulting Economist
New York

Effective Labor Arbitration, The Impartial Chairmanship of the Full-Fashioned Hosiery Industry, by THOMAS KENNEDY. University of Pennsylvania Press, Philadelphia, 1948. 286 pages. $3.50.

THERE is still a great aura of mystery about labor arbitration. Where do impartial arbitrators come from? How do they get that way? How do they preserve their impartiality and survive to arbitrate again?

All of these and many other questions are answered authoritatively by Professor Kennedy, who himself served for a considerable time as the impartial chairman or umpire for the full-fashioned hosiery industry.

The book does not make easy reading. It is replete with technical discussion of the history, processes and production problems of the hosiery manufacturing industry. Nevertheless for serious students of arbitration it is well worth a thorough examination. The procedures, techniques and principles that have been established over a period of years during regimes of various impartial umpires for the industry provide useful guideposts to arbitration proceedings in other fields of industry.

As the author points out, the jurisdiction of the impartial chairman in the hosiery industry has not been limited to adjudication of disputes arising over the interpretation and application of the current contract. To be sure the chairman has had no power to settle disputes over the terms of new contracts. But he has been empowered to settle "extra-contract" issues relating to disputes over working conditions not covered by specific contract clauses.

"Extra-contract jurisdiction is essential," Professor Kennedy argues, "if the impartial chairmanship is to perform the function of removing all reasonable causes for resort to economic force during the life of the agreement. The agreement cannot be so comprehensive as to offer guidance on all problems. Entirely new issues are bound to arise. Unless the union were willing to agree that all extra-contract problems should be decided unilaterally by management, an area for conflict would be left open. In the hosiery industry it is inconceivable that the union would have accepted the principle that administrative initiative and uninterrupted production are basic rights of management under the agreement if arbitration of extra-contract issues had not been provided."

This book explains that the effectiveness of the arbitration machinery has depended very largely on the degree of confidence imposed by both management and labor in the persons who have held the assignment of impartial chairman. By coincidence, out of a total of more than 1,000 decisions rendered over a period of sixteen years, there has been an almost fifty-fifty break in the decisions favoring the union and those favoring the management. In explanation of this coincidence, Professor Kennedy sums up cogently: "The percentage of cases won by each party is no measure of the soundness or fairness of an impartial chairmanship. In fact an impartial chairman in order to be fair and equitable might find it necessary to favor the requests of one of the parties in ninety or even one hundred percent of his

decisions. In this respect an impartial chairman is like a baseball umpire. No one would call a baseball umpire fair just because he called an equal number of strikes and balls against each team. It depends on the pitches. If they are not across the plate, they are not strikes. Likewise in an impartial chairmanship it depends on the requests of the parties. If the requests are unreasonable they must be denied regardless of the number of decisions the party may have won or lost in the past."

RUSSELL L. GREENMAN

Director of Personnel Relations
General Cable Corporation

Increasing Wholesale Drug Salesmen's Effectiveness, by JAMES H. DAVIS. Bureau of Business Research, Ohio State University, Columbus, 1948. 193 pages. $3.00.

IN THIS study a bold, new advance is made in analyzing the fundamentals of the selling process and in developing new methods in sales management.

Two techniques of modern scientific management — job analysis and time and motion study — are applied here to analyze the actual job of the wholesale drug salesman. The results of this approach, as set forth in the book, are of vital significance for wholesale selling, from the standpoint of policy, administration and technique.

The research on which this book was based was undertaken as a part of a fellowship granted by the National Wholesale Druggists Association. Travel with seventy salesmen from nine wholesale firms supplied information which helps flavor the book practically and gives it a "grass roots" rather than an academic or detached point of view. In addition, data were secured by questionnaires distributed to wholesale drug executives, to wholesale drug salesmen and to retail druggists throughout the nation. Thus information was shown not only as to what the salesmen are doing, but what the retailers want them to do.

The job analysis of the work of the wholesale drug salesmen is based on careful study of such primary source materials, supplemented by observation or discussion with salesmen on the job. The generalized job analysis given in the book may be readily adapted to the needs of the individual business.

Detailed analyses were made of third-party observations of over 10,000 sales attempts made by the seventy representative wholesale drug salesmen during seventy-two days of actual selling to retailers. This time and duty analysis provides facts in statistical form on such significant questions as: How do salesmen actually spend their time? Which methods of selling are most effective? Which types of selling arguments are most productive? How can time spent in actual selling be increased?

In presenting the results of the study, every effort has been made to give suggestions that will be of practical value in improving selling performance. From the detailed, qualitative information in this book, the author has drawn numerous interpretations and recommendations which show the way to scientific selection of salesmen, more effective training, better methods of compensating salesmen, more scientific sales force supervision, and better methods of selling. To suggest, if not encourage like studies in the sales and distributive fields, the book shows how a similar study, applying scientific methods, may be made in any individual business.

This study is a fundamental advance in analysis of the actual sales process and the approach made suggests techniques of promise for improving sales methods and reducing sales costs in the approaching competitive market. It is a book which alert sales executives cannot afford to overlook.

JOSEPH F. MEISTER

Assistant Manager
Standardization Division
The Curtis Publishing Company

Quality Control Methods, by CLIFFORD W. KENNEDY. Prentice-Hall, New York, 1948. 227 pages. $4.75.

Quality Control in Industry, by JOHN G. RUTHERFORD. Pitman, New York, 1948. 201 pages. $3.50.

Quality Control, by NORBERT L. ENRICK. The Industrial Press, New York, 1948. 122 pages. $3.00.

THE publishing houses, if not the industrial companies, are adopting quality control. Each of these three new books marks the initial entry of a publisher into this field.

Little in the books is new. Most of the discussion is devoted to acceptance sampling, control of processes by Shewhart charts, and other well known statistical techniques. Emphasis appears to be guided strongly by the personal experience of the respective authors.

Kennedy, well known for his conduct of the successful conferences at Federal Products Corporation, has supplied a most readable work. It is well illuminated with analogies, anecdotes, and a light informality of style which will be acceptable to many readers.

Rutherford's book comes closest to adding materially to the available literature. He supplies a good discussion of the managerial and economic aspects of the subject before he takes up the statistical techniques. He

exemplifies the latter by instances from a variety of experiences which render them more realistic.

Enrick's book reflects an experience in government rather than industry. Emphasis is on acceptance sampling techniques while the diction has a strong resemblance to the language of government directives. Yet, the quality problems of the armed services are of great concern to industry in the event of another emergency and any enlightenment on these problems will materially aid mobilization.

In the aggregate, these books are reminiscent of the early books on scientific management which emphasized the techniques of time study, the formula for wage curves and other technical detail. The broader problems of human relations, organization and even underlying philosophy were fully considered much later, following the availability of a body of experience.

Quality control stands in a pioneer position today. Experience is being accumulated but has hardly been yet disseminated. It is this dissemination of experience which should be the objective of the literature for the next few years.

JOSEPH M. JURAN
Professor of Administrative Engineering
New York University

The Administrative State, by DWIGHT WALDO. Ronald Press, New York, 1948. 227 pages. $3.25.

Freedom and the Administrative State, by JOSEPH ROSENFARB. Harper, New York, 1948. 274 pages. $4.00.

BOTH of these books reflect the expansion in the administrative aspects of government and the arrival of a period of administration appraisal prophesied by the young instructor, Woodrow Wilson, sixty years ago.

Professor Waldo discusses "the public administration movement from the viewpoint of political theory and the history of ideas," and "seeks to review and analyze the theoretical element in administrative writings and to present the development of the public administration movement as a chapter in the history of American political thought." This is addressed to a section of university scholars; the third chapter entitled "Scientific Management and Public Administration," and the two final chapters, constituting Part Three—"Some Fundamental Concepts: A Critique"—should have particular interest for students and practitioners of management generally. They are characteristic of Waldo's exploration of pertinent literature, search for assumptions and implications, and efforts to find relationships and influences among pioneers and movements. They also illustrate the fact that Waldo writes better than most in this field; he is incisive, observant, and skeptical in diagnosis.

The search which dominates his study is for evidences of method; he is not unique for being more satisfactory in noting the limitations and naivete of the writers he appraises than in supplying a fresh and satisfactory new conception of science as applied to the study of social institutions. But what he does have to say is thought-provoking—so much so that the reviewer regrets his omission of an appraisal of *Federal Administrators* by MacMahon and Millet, a distinguished book among studies in public administration in the past three decades for the importance of its topic, the methods employed, and the insight and wisdom with which conclusions are drawn. We would like a book from Waldo on a substantive topic; in the meantime we will do well to add the present volume to our personal working library and study it.

Mr. Rosenfarb is a lawyer by training who served with the National Labor Relations Board and is also the author of *The National Labor Policy and How It Works.* One judges that his experience in public administration stimulated or fed an already existing desire to find some comprehensive explanation of the nature and ubiquity of administrative development. Thus his book impresses the reader as the product of a personal need, wide in its scope and in its reference to contemporary writings.

"The interpenetration of the economic and political processes," he finds, "is one of the chief characteristics of at least the past half-century and has manifested itself in every economy in the world." He finds the general explanation in his thesis "that an economy in which continuous planning is essential is inherent in our economic system, and that a managed economy founded on private enterprise, and democratically controlled and oriented, should be America's contribution to modern statecraft and social systems. We, the world over, are now entering what may be called the 'administrative state.' In order to appreciate its character, the nature, origin and evolution of the state as an institution will be traced, not alone in structural form, but as embracing the social, economic, legal, psychological, geographic, military, cultural and political forces that have influenced the development of society and the state." This is a large order. The treatment has the virtues and difficulties inherent in such an effort to make a philosophy adequate to orientation in time and place within a single volume. The larger generalizations are of a

nature familiar to alert readers of such a journal as this; the details, with which each reader will have some familiarity within some one field at least, may seem more shaky and lacking in penetration and the total impression is somewhat academic. Yet an amazing number of suggestive and crucial questions are raised and faced.

There are four "books": the first on "The Genesis and Evolution of the Administrative State" is essentially a brief history of political theory and institutions in the light of recent writings in anthropology and social psychology as well as economics and political science; the second treats of freedom and democracy in the administrative state, assuming the fact that some kind of guidance and total direction of policy is inherent in a division of labor and machine society, and based on the view that a choice whereby freedom and democracy may be enjoyed is possible; the third concentrates on the question of labor relations, not only because the author is most familiar with that question but also because, as he rightly sees, it is a central one to be met. The final chapter is on law and government. Here he shows familiarity with central problems and some of the recent studies and reports relevant to them. He urges that the British Cabinet system (of the type developed in Lloyd George's War Cabinet, apparently, with ministers without portfolio as top policy initiators) is best suited to the administrative state. The treatment of parties is slight, and a reference to the role of Bevin, Attlee and Morrison on Page 186 suggests that this area of government is not familiar to him.

These two books are alike in reflecting the coming-of-age of the study of public administration—one from the inside, so to speak; the other from a convert from the law. Waldo contributes most to a reappraisal of approach, methods, assumptions and the stimulation of greater thought on fundamental thinking; Rosenfarb offers a wider conspectus and a useful making of sense of tendencies which many hate blindly and therefore disastrously for all of us.

JOHN M. GAUS

Professor of Government
Harvard University

Labor Unions in Action, by JACK BARBASH. Harper, New York, 1948. 270 pages. $3.50.

Labor Unions in Action is more an interpretative than a factual portrayal of the labor movement. Its purpose is to reveal the spirit of union behavior and the motives and desires of union leaders and members rather than analyze and appraise the effectiveness of their actions in a particular situation or the impact of their policies in general. The volume deals almost entirely with the Roosevelt era during which the growth of unionism, in the words of the author, "is inextricably intertwined with the favorable climate created for union organization in a positive and energetic fashion by government" (Page 7). From the point of view of social and economic history, this is of the utmost significance; the author could well have given greater emphasis to this fact, namely that the election of Roosevelt and the New Deal was not the result of organized efforts of workers in rebellion against the hostility which had been their lot and which is graphically described in the first pages of the book. The New Deal government came into being because a whole people were faced with the collapse of their economic system. The ensuing mass growth in the labor movement was more a by-product than the central core of a change in government.

This is a book written by an "insider," and the illustrations and characterizations based on first-hand knowledge gained by the author's own experience within labor unions are its chief contributions. Most of the factual material about union structure, union government and collective bargaining has been more adequately treated by other authors. Its uniqueness lies in its "human interest" appeal. For example, there are the personal accounts of how union organizers go about their tasks of enlisting members and setting up local organizations, including the unforgettable story of one organizer who after four long months spent in individual house calls, issuance of weekly bulletins and making himself "a respected member of the community," had a total of ninety recruits to his credit.

Readers will probably find Chapter II the most interesting. In the discussion of why workers join unions the author cites the desire for improvement in wages and hours but emphasizes non-pecuniary motives, such as the influences brought upon non-member employees by union members, the natural impulse to "climb the band-wagon" during a large-scale organization drive, the outlet for expression which unions offer to those with the capacity and desire for leadership. Personnel managers will be interested, and a bit chagrined, to learn the important role which management favoritism has had in organizers' appeals. After several decades of "scientific" and "personnel" management, large masses of workers were induced to join unions and demand rigid seniority rules in order to eliminate practices which management itself could not defend as just or sound. In Chapter XI dealing with Communist unionism, the author does not hesitate to mention names and cite chapter and verse in support of his

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statements. This discussion provides worthwhile reading for those who are concerned with one of the major problems of our times.

Labor Unions in Action is not an exhaustive treatise and it is somewhat scrappily put together. It gives evidence of having been in process of writing over a period of time with last-minute insertions. More careful proofreading would have eliminated some of the discrepancies incident to this kind of revision of manuscript. For example, on Page 28 it is stated that the A.F.L. is composed of four departments but on Page 45 recognition is given to the recently established Maritime Department. On Page 209 Joseph Curran, President of the C.I.O. Maritime Workers, is included in a list of Communist sympathizers but two pages later an anti-Communist quotation of his is cited without any explanation by the author. Some persons will take exception to some of the generalizations in the book. The A.F.L., for example, recalling their years of experience in the International Labor Office and Samuel Gompers' trip to Mexico shortly before he died, will challenge the implied statement that A.F.L. leadership is not as "world-minded" as the C.I.O.'s (Page 172). The discussion of craft-versus-industrial unionism ignores the economic facts of life, namely, the craftsmen's fears of a reduction in the spread of wages between skilled and unskilled occupations which they fear industrial unionism will bring about.

The book is a useful addition to the labor book-shelf. It is written for the here and now; indeed some of it is already outdated, but this is inevitable with any volume dealing with such a dynamic subject. It is lively prose and has numerous pithy quotations. The author is to be congratulated for avoiding the all-too-frequent but provoking habit of using strings of letters to identify unions. An exception is UWRDSEA (Page 39). Are there half-a-dozen persons outside the fold who can identify that organization?

FLORENCE PETERSON
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Bryn Mawr College

Handbook of Personnel Management, by GEORGE D. HALSEY. Harper, New York, 1947. 402 pages. $5.00.

IN HIS preface, Mr. Halsey sets himself the following four objectives:

1. To supply practical information to the factory, store and office executives who are directly responsible for personnel management;

2. To outline the general problems and objectives of personnel management and to show how many organizations have solved these problems in practice and actually accomplished their objectives;
3. To discuss basic principles and theories of personnel management; and also,
4. To provide a suitable textbook for college courses in personnel management.

To the reviewer, two questions immediately suggest themselves: (1) Is it possible to reconcile the conflicting requirements of all these objectives in the compass of a small textbook (402 pages)?; (2) How well does the author realize each objective?

The four objectives naturally group themselves in pairs. The first two are practical and call for facts and figures. The last two objectives are in the realm of theory and unification of knowledge. Each pair of objectives calls for a different method of treatment. The handbook approach chosen by the author is well suited to accomplish the first two objectives. But this detailed and factual presentation of data is difficult to reconcile with a complexly interrelated theoretical discussion of principles. The plan of the book as a whole and the arrangement of the subject matter are excellent. From this point of view, Mr. Halsey has succeeded in making an interesting and thought-compelling presentation. However, the promise given by the table of contents, and by the short introductory sections to certain chapters, is broken by dull elaboration of factual details.

In his effort to accomplish incompatible objectives, Mr. Halsey inevitably falls short. Even as a handbook, the text does not have the inclusiveness suggested by its title.

As a potential college text, the book lacks both interest and continuity. In losing sight of the underlying principles which are sketchily treated, the student will inevitably be bewildered by the many reproductions of forms and schedules which are scattered throughout the text. An additional source of discouragement are the many pages of definitions and analytical comments which merely enumerate technical facts and destroy any sense of unity.

Furthermore, unnecessary and serious reading difficulties are introduced by the manner in which the reproductions have been incorporated in the text. For example, with reference to job analysis the text material is suddenly interrupted after Page 17 by the insertion of a "Job Analysis Schedule" which takes up six pages. The text continues on Page 24 and for the first time makes a subordinate reference to the preceding schedule. The main reference to the schedule does not appear until Page 31. It is not even clear why this specific schedule should be reproduced. On several pages of his analytical comments, the author repeats paragraph after paragraph of the identical information which is given in the original schedule (Cf. Pages 26, 27 and 32 respectively). Such confusing faults of arrangement occur throughout the book.

PAUL PIGORS
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Massachusetts Institute of Technology

The Comptroller, His Functions and Organization, by J. HUGH JACKSON. Harvard University Press, Cambridge, 1948. 97 pages. $2.00.

THE 1946-1947 Dickinson Lectures, given by Professor Jackson of Stanford University before the Faculty and Students of the Graduate School of Business Administration of Harvard University, have been published in a book which represents a welcome and important contribution to the existing literature on corporate management organization.

Treating specifically the place of the comptroller in executive business management, the author first painstakingly traces the development of the comptrollership function and the growing recognition by enlightened corporate management of its official place in the top management family. Second, he calls upon his exhaustive research in the field of corporate organization, embracing studies of 143 leading American corporations, to segregate and analyze those accounting and statistical functions which in the past have been assigned to the comptroller, and those newer fields of management control which are more and more being entrusted to his care.

Third, Professor Jackson cites the desirable relation of the comptroller to the board of directors, the president and the other primary functional executives of the corporation. The internal organization of the comptroller's department is treated as well.

Last, but far from least, the essential personal qualities required in comptrollership are briefly summarized.

Since the text is well annotated and the volume contains three extensive appendices—"Excerpts From Corporate By-Laws," etc.; "Selected Organization Charts, the Comptroller's Department"; "The Standard Oil Company of California, a Specific Example"—it has been possible for the writer to digest and compress into but ninety-seven pages the essential "meat" of a subject, which, if handled by a less astute author, could

easily have covered three times that number. Professor Jackson utilizes the case system technique effectively to reconcile theory and practice.

This book is recommended reading for all members and students of corporate management. Initial reading time: two hours; future reference time: as long as the book will stand the wear and tear of constant handling.

ALLEN H. OTTMAN

Vice President and Controller
American Hard Rubber Company

Mechanization Takes Command, by SIEGFRIED GIEDION. Oxford University Press, New York, 1948. 743 pages. $12.50.

HERE is a massive, well-illustrated, cleverly written volume by the gifted Swiss author, Siegfried Giedion, which has aroused a good deal of interest. Certainly it is worthy of this attention although it should not be inferred that the book, any more than Professor Toynbee's *A Study of History* which has received equally wide publicity, is any less deserving of the attention of the executive or scholar because of its popular appeal. True enough, Mr. Giedion's work is such fascinating reading that one is loath to lay it aside, particularly after surmounting some rough going early in the book. It tells a story that is at once familiar and strange since it presents facts of which most people are aware but about which they have probably not thought, at least in the manner in which they are here presented.

This book is not merely a description of the way in which mechanization has invaded certain fields of everyday activity. It is that and a great deal more. For one cannot read the book without asking where this mechanization is leading us and what can be done about its less desirable features. Not that the author favors a return to some handicraft type of manufacturing as some sentimentalists have suggested. He rejects that suggestion as all reasonable men must. Throughout the book and in a special section at the end, he points out the fundamental problems which contemporary man faces as a result of increased mechanization. However, no solutions are outlined.

While *Mechanization Takes Command* is a book which holds the reader's interest in an unusual way, there are many things the careful reader will question. For instance, in his discussion of the mechanization of the packing industry, the author suggests that the mechanized killing of cattle and hogs and the consequent growth of a neutral attitude towards death has perhaps lead to our indifference to the slaughter of whole populations in Europe. This is an intriguing thought but it is undoubtedly overdrawn since the average person has only the haziest notion of what takes place on the kill-floor of a packing plant and a smaller percentage of the population actually sees the killing now than was the case when every farmer did his own slaughtering.

Then, too, the author is inclined to make categorical statements which call for qualification. For example, he states, "The guilds produced wares of a consistently high standard." Anyone who has made a study of guild regulations is aware that these regulations and the fines which were levied for violations indicate that the guilds had difficulty in trying to maintain their standards. A mere statement of standards unfortunately does not mean that these standards are always observed.

However, these two examples of possible disagreement—there are many others, of course—do not mean that the book is of doubtful value. On the contrary, considering that Mr. Giedion's work not only describes the development but also interprets the meaning of mechanization—and in this respect his book differs from other histories of mechanization such as Feldhaus' *Die Technik der Antike und des Mittelalters*—one is surprised at the relatively few points of disagreement.

Students of management will be most interested in the author's handling of the scientific management movement and in particular in what he has to say about Frederick W. Taylor and the Gilbreths. Unfortunately the analysis at this point is briefer than seems desirable but here Mr. Giedion is exercising what he rightly considers to be the prerogative of the historian—"to observe at close range certain phenomena, certain fragments of meaning, while omitting others from his field of attention." If no distortion of the truth results, no objection can be made to this procedure. However, in the case of Taylor a certain distortion is discernible. For one thing the impression is given that Taylor favored the so-called "military" type of organization. All students of Taylor's works know of course that he was most interested in revealing the deficiencies of that form of organization. For another thing, Giedion emphasizes that Taylor set standards on the basis of the output of the most capable workers with the result that "the average worker cannot escape automatization." Taylor's view was that only the most capable workers should be used on any job and that those who were average or below for one type of work should be given jobs for which they could qualify as "most capable." In so far as management succeeded in doing this each worker was permitted to develop his potentialities to their limit. Whether Taylor's view can be successfully applied

in practice is, to be sure, another matter. But it is unfair to accuse Taylor of ignoring a problem for which he had a solution which he was convinced was successful.

This book cannot be recommended as one which is practical in the sense that the reader will be able to apply any of the knowledge it contains to the solution of the everyday problems of plant management. For one who seeks a better insight into what is going on about us, however, Mr. Giedion's volume is most useful.

HAROLD E. KUBLY
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School of Commerce
University of Wisconsin

Resolving Social Conflicts, by KURT LEWIN. Harper, New York, 1948. 230 pages. $3.50.

AS PROF. Gordon W. Allport remarked in his introduction to this well edited collection of Kurt Lewin's writings, "The unifying theme is unmistakable: the group to which an individual belongs is the ground for his perceptions, his feelings, and his actions."

This preoccupation with the interrelationship between the individual and the numerous groups to which he belongs is not only the theme of these essays however. It constitutes the very seed from which grow Lewin's system of social analysis and its conceptual parts. For Lewin found it necessary to devise his own concepts if the interdependence of individual and groups was to be given adequate expression. Phrases like "space of free movement," "time perspective," "aspiration level," which may sound strange on first acquaintance, quickly take on their proper significance in their systematic relations, as Lewin unfolds them.

Professor Lewin, it will be recalled, was Director of the Research Center for Group Dynamics at Massachusetts Institute of Technology at the time of his death in 1945. He had come to the United States in 1932 from the University of Berlin with a reputation already well established. This, however, is the first volume of his work which has been made available to the general reader in thirteen years. The book has been divided into three parts: "Problems of Changing Culture," "Conflicts in Face-to-Face Groups," and "Inter-Group Conflicts and Group Belongingness," the latter being a perspicacious analysis of the so-called "Jewish question."

For management readers the most pertinent section will probably be the second, although only one chapter of that section deals specifically with industrial relations. Nevertheless, the pages abound with thought-provoking phrases, sentences and ideas which can here only be

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EQUIPMENT ANALYST: Permanent job for man, 25 to 30, capable of analyzing office conditions and office equipment and building modern office systems around specific office machines. Position in expanding progressive midwestern business organization. Previous experience as office manager and office equipment salesman desirable. Give all desired information: personal, educational, and work history. All replies confidential. Box No. 233, ADVANCED MANAGEMENT.

AVAILABLE — EXECUTIVE VICE-PRESIDENT OR ASSISTANT TO THE PRESIDENT — Soundly balanced management skill as top co-ordinator. Able to add "know-how" strength and execution where needed for increasing profits. Now on Pacific Coast. Box 812, West Coast Adv. Agency, 215 W. 7th St., Los Angeles 14, Calif.

POSITION WANTED

PERSONNEL MANAGER, 8 years of successful experience as employment interviewer, employment manager, and personnel manager in two companies manufacturing metal goods, plus 4 years previous practical factory work after graduation from Yale College in 1935. Participated in union contract negotiations. Happily married, one child, willing to relocate. Box No. 238, ADVANCED MANAGEMENT.

PERHAPS YOU KNOW OF SOMEONE

Perhaps you know of someone who has the following qualifications:

1. A doctor's degree in education or psychology, or work for one nearing completion.
2. Good-standing withdrawal from labor-union membership.
3. Practical experience in production management, in personnel work and/or in teaching.
4. Personality for conference leading, administrative ability, character, reputation.
5. Available for full-time employment now, or prior to next fall.

Work to be done is the practical application for the fifth and ensuing years of the industry phase, of research and exploration for which the Carnegie Corporation of New York gave three grants now terminated totalling $50,000. This is now a commercial enterprise, maintaining continued exploration in education. The right man would be worth at least ten to twelve thousand a year. Address—

HAROLD L. HOLBROOK,
Personnel and Labor Relations Consultant
717 Second National Bank Building
New Haven, Connecticut

suggested. Some which approach the epigrammatic are these: "The parallel to democratic freedom for the individual is cultural pluralism for groups. But any democratic society has to safeguard against misuse of individual freedom by the gangster or—politically speaking—the 'intolerant,'"; "To believe in reason means to believe in democracy, because it grants to the reasoning partners a status of equality"; "Even the best plan of reorganizing production channels is worthless if it does not fit the human beings who have to live and react in that setting."

Among the aspects of individual-group relations which Lewin underscores is the role of leadership and the problem of incentive. About the former, he argues that changes in ideas and cultural outlook are linked to changes in power (status) relations. With respect to incentive: "By and large, there is a tendency in our society to raise the level of aspiration toward the limit of the individual's ability. The principle of realism, on the other hand, tends to safeguard the individual against failure and to keep ambition down to earth. How high the individual can set his goal and still keep in touch with the reality level is one of the most important factors for his productivity and his morale."

It is Lewin's thesis that the resolution of social problems can come only with an understanding of the individual's place in the group, or more accurately his location in the total social situation—compounded of numerous individual and group relations. The Gestalt approach is put forward with insistence. It must be remembered that this is a volume posthumously published, a collection of fragments even though assembled with extraordinary skill. Professor Lewin cannot therefore be charged with omission in something he did not intend to be complete. For this reason the following comment is not criticism of his system—still in the developmental stages in his own thinking—but only a reservation on its present practical application, with which he was so intensely concerned.

One of the most difficult aspects in any process of resolving social conflicts is identifying the nature or essence of a particular conflict. For example, what seems so obvious in an ordinary wage dispute becomes uncertain as one probes further. When union and management are separated by a nickel an hour in negotiations, we find it difficult to establish why this difference looms so large to both that they are willing to risk prolonged shutdown rather than compromise their positions. It is not sufficient to say that the answer comes from the total situation. That is too easy. We need more refined methods of analysis enabling us to abstract from the total situation those elements of immediate primary significance. It was in this direction that Professor Lewin was moving at the time of his death. As has been said, it is unfair to expect hypothesis or answer in this book, but its contents point so insistently to the question as to emphasize the need for answer.

NEIL W. CHAMBERLAIN

Research Director
Labor and Management Center
Yale University

A Proposed Amendment to the S.A.M. By-Laws

IN accordance with Section X of the By-Laws, which requires that any proposed amendment to the By-Laws be published in a general publication of the Society and sent to members at least sixty days before it is voted on by the Board of Directors, ADVANCED MANAGEMENT is publishing herewith the revision of Sections II and III proposed by resolution at the meeting of the Board of Directors on October 29, 1948. The original text of the Constitution and By-Laws was published in the October 1947 issue of MODERN MANAGEMENT.

II. Initiation Fees

Application for membership shall be accompanied by initiation fees, as follows:

	Resident U.S.A. & Canada	*Resident Elsewhere*
Members, Associate Members, Firm Members	$5.00	$2.50
Student Member	None	—

If applicant is not accepted such fee will be returned.

A member of any grade advanced or transferred from another grade, shall not be required to pay an additional initiation fee.

III. Annual Dues

Annual dues shall be payable in advance, as follows:

	Resident U.S.A. & Canada	*Resident Elsewhere*
Member	$20.00	$10.00
Associate Member	10.00	5.00
Firm Member (For minimum of two representatives)	40.00	20.00
Additional Firm Representative	20.00	10.00
Student Member (see below)	5.00	—

From July 1, 1947, the annual dues of Student Members shall be fixed by the Board of Directors but such dues shall not be fixed in amount greater than $5.00.

A new member shall pay the full initiation fee and full annual dues at the time of application. Any unexpired portion of dues shall be credited to the member's account against annual dues for the succeeding fiscal year.